Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

1.9Ec752F.FOS ~~5F25-5F26~~

FOS-260

NOVEMBER 1971

# FATS AND OILS Situation

U. S. D. A.
National Agricultural Library
Received

Procurement Section
Current Serial Records

ECONOMIC RESEARCH SERVICE

U. S. DEPARTMENT OF AGRICULTURE

Table 1.--U.S. Fats and Oils Situation at a Glance

| Item | Unit | Marketing year total or average |  | 1970 |  | 1971 |  |  |  |
|---|---|---|---|---|---|---|---|---|---|
|  |  | 1969-70 | 1970-71 preliminary | September | October | July | August | September | October |
| SOYBEANS (Year beg. Sept.) |  |  |  |  |  |  |  |  |  |
| U.S. average price received by farmers | $ bu. | 2.35 | 2.84 | 2.66 | 2.77 | 3.18 | 3.09 | 2.95 | 2.96 |
| U.S. support price | $ bu. | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 |
| Price, No. 1 yellow, Illinois points | $ bu. | 2.53 | 3.00 | 2.75 | 2.90 | 3.30 | 3.23 | 3.01 | 3.04 |
| Price, No. 2 yellow, f.o.b., Gulf | $ bu. | 2.74 | 3.19 | 2.96 | 3.07 | 3.51 | 3.40 | 3.21 | 3.21 |
| Price, No. 2 yellow, f.o.b., Baltimore | $ bu. | 2.76 | 3.21 | 2.99 | 3.08 | 3.51 | 3.40 | 3.25 | 3.20 |
| Receipts at mills | Mil. bu. | 742.6 | 769.0 | 50.3 | 134.7 | 42.5 | 34.4 | 45.4 | N.A. |
| Crushings | Mil. bu. | 737.3 | 760.1 | 53.3 | 66.8 | 62.4 | 63.6 | 54.3 | N.A. |
| Oil yield per bushel crushed | Lb. | 10.65 | 10.83 | 10.57 | 10.92 | 10.82 | 10.88 | 10.94 | N.A. |
| Meal yield per bushel crushed | Lb. | 47.35 | 47.37 | 47.74 | 47.13 | 47.26 | 47.82 | 47.71 | N.A. |
| Stocks at mills, end of month | Mil. bu. | 33.4 | 42.3 | 30.4 | 98.3 | 71.5 | 42.3 | 33.4 | N.A. |
| Exports | Mil. bu. | 432.6 | 433.2 | 29.9 | 44.0 | 34.4 | 31.3 | 29.2 | N.A. |
| SOYBEAN OIL (Year beg. Oct.) |  |  |  |  |  |  |  |  |  |
| Production | Mil. lb. | 7,904.4 | 8,261.4 | 563.8 | 729.8 | 674.9 | 692.2 | 594.2 | N.A. |
| Domestic disappearance | Mil. lb. | 6,327.6 | 6,267.4 | 522.3 | 591.5 | 442.1 | 524.6 | 518.6 | N.A. |
| Exports | Mil. lb. | 1,419.7 | 1,742.3 | 166.3 | 111.5 | 202.3 | 92.4 | 136.8 | N.A. |
| Stocks, end of month | Mil. lb. | 543.4 | 755.0 | 543.4 | 562.3 | 745.3 | 819.2 | 755.0 | N.A. |
| Price, crude, Decatur | ¢ lb. | 11.2 | 12.8 | 12.1 | 14.0 | 14.5 | 14.5 | 12.8 | 13.2 |
| SOYBEAN MEAL (Year beg. Oct.) |  |  |  |  |  |  |  |  |  |
| Production | Thou. ton | 17,596.5 | 18,026.8 | 1,273.0 | 1,574.3 | 1,474.3 | 1,520.6 | 1,295.4 | N.A. |
| Domestic disappearance | Thou. ton | 13,514.2 | 13,398.5 | 1,055.7 | 1,256.8 | 1,011.5 | 1,170.5 | 874.7 | N.A. |
| Exports | Thou. ton | 4,035.4 | 4,559.3 | 282.9 | 281.0 | 406.6 | 349.7 | 487.9 | N.A. |
| Stocks at mills, end of month | Thou. ton | 137.0 | 144.7 | 137.0 | 168.8 | 215.0 | 215.4 | 144.7 | N.A |
| Price, 44% protein, bulk, Decatur | $ ton | 78.40 | 78.50 | 81.20 | 77.25 | 84.25 | 78.75 | 72.25 | 74.75 |
| Price, 49-50% protein, bulk, Decatur | $ ton | 86.60 | 84.30 | 88.20 | 83.75 | 90.00 | 84.20 | 80.00 | 80.75 |
| COTTONSEED (Year beg. Aug.) |  |  |  |  |  |  |  |  |  |
| U.S. average price received by farmers | $ ton | 41.10 | 56.50 | 51.10 | 56.00 | --- | 60.00 | 58.40 | 55.80 |
| U.S. support price, basis grade | $ ton | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 1/ | 1/ | 1/ |
| Receipts at mills | Thou. ton | 3,846.3 | 3,865.9 | 210.6 | 1,027.1 | 50.1 | 43.2 | 191.9 | N.A. |
| Crushings | Thou. ton | 3,925.2 | 3,728.5 | 97.6 | 417.4 | 133.7 | 139.1 | 108.6 | N.A. |
| Stocks at mills, end of month | Thou. ton | 80.4 | 217.8 | 179.5 | 789.2 | 217.8 | 121.9 | 205.2 | N.A. |
| COTTONSEED OIL (Year beg. Aug.) |  |  |  |  |  |  |  |  |  |
| Production | Mil. lb. | 1,281.9 | 1,210.4 | 30.5 | 134.3 | 43.5 | 47.0 | 34.3 | N.A. |
| Domestic disappearance | Mil. lb. | 1,068.9 | 898.2 | 49.3 | 103.3 | 31.0 | 56.9 | 59.2 | N.A. |
| Exports | Mil. lb. | 437.5 | 357.4 | 17.8 | 12.2 | 69.8 | 14.3 | 26.2 | N.A. |
| Stocks, end of month | Mil. lb. | 213.9 | 167.2 | 121.4 | 140.1 | 167.2 | 142.9 | 91.7 | N.A. |
| Price, crude, Valley | ¢ lb. | 12.0 | 14.7 | 12.5 | 13.6 | 16.2 | 16.5 | 15.6 | 14.3 |
| COMMERCIAL LARD (Year beg. Oct.) |  |  |  |  |  |  |  |  |  |
| Production | Mil. lb. | 1,810.4 | 2,027.7 | 166.4 | 184.7 | 142.0 | 150.0 | 167.0 | N.A. |
| Domestic disappearance | Mil. lb. | 1,401.7 | 1,629.0 | 125.5 | 140.9 | 135.9 | 141.5 | 151.9 | N.A. |
| Exports | Mil. lb. | 349.3 | 329.4 | 27.9 | 37.2 | 10.6 | 15.8 | 19.6 | N.A. |
| Shipments to U.S. Territories | Mil. lb. | 55.3 | 52.6 | 7.4 | 7.4 | 7.6 | .2 | .5 | N.A. |
| Stocks, end of month | Mil. lb. | 59.8 | 76.6 | 59.8 | 59.0 | 89.1 | 81.6 | 76.6 | N.A. |
| Price, loose, tanks, Chicago | ¢ lb. | 11.6 | 11.1 | 11.5 | 11.8 | 11.3 | 12.0 | 11.1 | 10.8 |
| CREAMERY BUTTER (Year beg. Oct.) |  |  |  |  |  |  |  |  |  |
| Production | Mil. lb. | 1,120.9 | 1,149.7 | 71.8 | 81.6 | 90.2 | 79.6 | 69.0 | N.A. |
| Domestic disappearance | Mil. lb. | 1,098.7 | 1,074.0 | 98.0 | 104.8 | 65.5 | 82.5 | 89.8 | N.A. |
| Stocks, end of month, total | Mil. lb. | 171.3 | 222.0 | 171.3 | 147.5 | 253.0 | 246.8 | 222.0 | N.A. |
| Stocks, end of month, CCC | Mil. lb. | 145.1 | 195.3 | 145.1 | 125.8 | 217.4 | 215.3 | 195.3 | N.A. |
| Price, 92-score, Chicago | ¢ lb. | 68.9 | 68.9 | 70.5 | 70.1 | 67.8 | 67.8 | 68.1 | 68.0 |
| FLAXSEED (Year beg. July) |  |  |  |  |  |  |  |  |  |
| U.S. average price received by farmers | $ bu. | 2.65 | 2.39 | 2.36 | 2.31 | 2.34 | 2.34 | 2.31 | 2.25 |
| U.S. support price, farm basis | $ bu. | 2.75 | 2.50 | 2.50 | 2.50 | 2.50 | 2.50 | 2.50 | 2.50 |
| Price, No. 1, Minneapolis | $ bu. | 2.90 | 2.66 | 2.64 | 2.60 | 2.68 | 2.62 | 2.61 | 2.58 |
| Receipts at mills | Thou. bu. | 15,945 | 19,596 | 2,712 | 1,807 | 1,503 | 1,812 | 2,873 | N.A. |
| Crushings | Thou. bu. | 14,448 | 18,946 | 1,807 | 1,536 | 1,264 | 1,679 | 1,707 | N.A. |
| Exports | Thou. bu. | 5,731 | 3,332 | 180 | 1,391 | --- | 4 | --- | N.A. |
| Stocks at mills, end of month | Thou. bu. | 2,743 | 3,396 | 4,537 | 4,808 | 3,735 | 3,868 | 5,033 | N.A. |
| LINSEED OIL (Year beg. July) |  |  |  |  |  |  |  |  |  |
| Production | Mil. lb. | 292.5 | 381.8 | 36.2 | 30.7 | 25.9 | 34.7 | 35.4 | N.A. |
| Domestic disappearance | Mil. lb. | 251.7 | 253.8 | 20.6 | 23.2 | 28.9 | 50.6 | 26.5 | N.A. |
| Exports | Mil. lb. | 43.0 | 52.5 | 2.7 | 2.5 | 7.5 | .1 | 6.1 | N.A. |
| Stocks, end of month | Mil. lb. | 128.7 | 203.8 | 129.9 | 134.9 | 193.2 | 177.1 | 179.9 | N.A. |
| Price, raw, Minneapolis | ¢ lb. | 11.9 | 9.7 | 10.0 | 10.0 | 8.8 | 8.8 | 8.8 | 8.8 |
| INEDIBLE TALLOW & GREASE (Year beg. Oct.) |  |  |  |  |  |  |  |  |  |
| Production | Mil. lb. | 4,830.5 | 5,250.1 | 419.5 | 416.7 | 401.3 | 420.1 | 468.0 | N.A. |
| Domestic disappearance | Mil. lb. | 2,721.6 | 2,626.9 | 230.1 | 209.2 | 200.5 | 222.2 | 236.0 | N.A. |
| Exports | Mil. lb. | 2,048.6 | 2,587.8 | 145.5 | 229.5 | 161.6 | 215.0 | 247.6 | N.A. |
| Stocks, end of month | Mil. lb. | 369.5 | 409.0 | 369.5 | 348.3 | 441.5 | 424.5 | 409.0 | N.A. |
| Price, bleachable fancy, Chicago | ¢ lb. | 7.9 | 8.1 | 8.2 | 8.8 | 7.7 | 7.9 | 7.6 | 7.4 |
| COCONUT OIL (Calendar year's 1970 and 1971) |  |  |  |  |  |  |  |  |  |
| Production | Mil. lb. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. |
| Imports | Mil. lb. | 594.7 | N.A. | 27.0 | 63.9 | 35.3 | 30.2 | 79.3 | N.A. |
| Domestic disappearance | Mil. lb. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. |
| Stocks, end of month | Mil. lb. | 100.8 | N.A. | 102.2 | 109.9 | 147.4 | 124.8 | 111.5 | N.A. |
| Price, crude, Pacific Coast | ¢ lb. | 16.3 | N.A. | 16.5 | 15.2 | 14.2 | 14.2 | 14.1 | 13.2 |
| PALM OIL (Calendar year's 1970 and 1971) |  |  |  |  |  |  |  |  |  |
| Imports | Mil. lb. | 140.9 | N.A. | 6.2 | 23.8 | 5.6 | 12.1 | 15.4 | N.A. |
| Domestic disappearance | Mil. lb. | 133.0 | N.A. | 13.1 | 14.9 | 16.1 | 16.8 | 26.0 | N.A. |
| Stocks, end of month | Mil. lb. | 42.9 | N.A. | 19.6 | 28.5 | 51.2 | 46.5 | 35.9 | N.A. |
| Price, Congo, tanks, New York | ¢ lb. | 13.2 | N.A. | 14.0 | 13.2 | 12.9 | 13.8 | 14.0 | 14.0 |
| PEANUTS (Year beg. Aug.) |  |  |  |  |  |  |  |  |  |
| U.S. average price received by farmers | ¢ lb. | 12.3 | 12.7 | 12.9 | 13.2 | --- | 12.9 | 13.5 | 13.8 |
| U.S. support price - Farmers' stock basis | ¢ lb. | 12.38 | 12.75 | 12.75 | 12.75 | 12.75 | 13.42 | 13.42 | 13.42 |
| Millings, all types, Farmers' stock basis | Mil. lb. | 2,267.9 | 2,615.9 | 246.5 | 362.4 | 42.9 | 52.0 | 208.0 | N.A. |
| Production of shelled edibles | Mil. lb. | 1,284.8 | 1,373.1 | 155.5 | 209.3 | 7.0 | 29.2 | 135.1 | N.A. |
| Total edible uses - shelled basis | Mil. lb. | 1,060.6 | 1,065.3 | 99.6 | 100.6 | 81.6 | 93.1 | 99.1 | N.A. |
| Crushings - shelled basis | Mil. lb. | 427.1 | 600.9 | 16.1 | 26.3 | 48.2 | 34.6 | 23.1 | N.A. |
| Commercial stocks, end of month - FS | Mil. lb. | 252.7 | 452.2 | 1,704.6 | 2,151.5 | 452.2 | 401.4 | 1,766.8 | N.A. |
| CCC stocks, end of month - FS | Mil. lb. | --- | --- | 252.6 | 420.7 | --- | --- | 613.0 | N.A. |
| PEANUT OIL (Year beg. Aug.) |  |  |  |  |  |  |  |  |  |
| Production | Mil. lb. | 182.0 | 253.5 | 6.7 | 14.8 | 20.4 | 15.0 | 9.4 | N.A. |
| Domestic disappearance | Mil. lb. | 154.5 | 193.1 | 12.3 | 14.0 | 17.9 | 11.6 | 14.5 | N.A. |
| Exports | Mil. lb. | 25.8 | 43.9 | .1 | 2/ | 15.7 | 12.1 | 4.3 | N.A. |
| Stocks, end of month | Mil. lb. | 25.3 | 41.8 | 11.6 | 12.4 | 41.3 | 33.1 | 23.7 | N.A. |
| Price, crude, Southeast mills | ¢ lb. | 14.9 | 17.1 | 16.1 | 16.9 | 18.5 | 18.5 | 17.2 | 15.4 |

1/ No support announced. 2/ Less than 50,000 pounds. N.A.--not available.

# FATS AND OILS SITUATION

## CONTENTS

Page

Summary . . . . . . . . . . . . . . . . . . . . . . . . . . 3

Situation and Outlook:

- Soybeans, oil and meal . . . . . . . . . . . . . . . . 4
- Cottonseed oil and meal . . . . . . . . . . . . . . 13
- Lard . . . . . . . . . . . . . . . . . . . . . . . . . . . 13
- Peanuts . . . . . . . . . . . . . . . . . . . . . . . . 16
- Flaxseed . . . . . . . . . . . . . . . . . . . . . . . 16

SPECIAL ARTICLES

Tallow and Grease Production and Marketing Trends . . . . . . . . . . . . 5125 . . . 17

Soybean Market Forecasts With Econometric Model . . . . . . . . . . . . 5126 . . . 26

• • •

Approved by
The Outlook and Situation Board
and Summary released
November 16, 1971

Principal contributors:
George W. Kromer
Stanley A. Gazelle

Economic and Statistical Analysis Division

Economic Research Service

U.S. Department of Agriculture
Washington, D.C. 20250

• • •

The *Fats and Oils Situation* is published in January, April, June, September, and November.

## SUMMARY

A sharp reduction in carryover stocks of soybeans has more than offset a moderately larger 1971 soybean crop. Total supplies this year, at 1.3 billion bushels, are 5% below last season and 10% under the 1969/70 record.

Soybean demand continues strong and the 1971 crop will be utilized with prices to farmers averaging about $3 per bushel—probably the highest season's price since 1947/48. Carryover stocks next September will likely be cut slightly below this year's 99 million bushels.

Soybean crushings for the marketing year that started September 1 may total around 750 million bushels, down slightly from 1970/71. Demand for soybean oil and meal continues strong but soybean supplies available for crushing are limited. The soybean industry's annual processing capacity has expanded to nearly 900 million bushels. Processing margins may be narrower than during the past 2 marketing years. The crushing rate slowed during October as processors had difficulty moving soybean meal into export because of the dock strike.

Exports of soybeans this marketing year are forecast around 400 million bushels, down from last year's record of 433 million bushels because of reduced supplies. Also, world supplies of competitive fats and oils are likely to be greater.

A lengthy dock strike would result in a considerable reduction of exports of soybeans and soybean meal this fall. Exports have varied sharply with the shutdowns and reopenings in recent weeks, but have generally averaged below year—earlier levels.

More acres are expected to be planted to soybeans in 1972. The strong soybean prices relative to corn probably will result in a soybean-corn price ratio (excluding corn set-aside payments) of around 3 to 1. This is the highest ratio favoring soybean plantings in recent years. Also, the 1972 program permits planting of soybeans on the non-set-aside portion of feed grain and wheat acreages without loss of program history or set-aside payments. But total acreage available for planting crops will be reduced through increased land set-aside. The 1972 feed grain program is designed to achieve a feed grain set-aside of at least 38 million acres, more than double the 18 million in 1971.

The 1972-crop soybean loan level will be maintained at $2.25 per bushel, the same as the previous 3 years. In announcing the 1972 program, USDA indicated a 48-million-acre planting goal for soybeans, a tenth more than in 1971.

# SITUATION AND OUTLOOK

## Soybeans

### Harvest Prices Near $3

Farmers' prices for 1971-crop soybeans probably will average about $3 per bushel compared with $2.84 last year, attaining the highest level since 1947/48. Prices during September-October averaged $2.96 per bushel, 24 cents above the same months in 1970. Prices are under some pressure from the heavy harvest and temporary slowdown in crushing and exports due to the longshoreman strike. But producers are storing large quantities of soybeans and prices probably will rise significantly after harvesttime pressures dissipate, the dock strike is resolved, and the supply situation tightens.

Producers can receive price support loans on their 1971-crop soybeans at the national average rate of $2.25 per bushel (No. 1 grade, 12.8-13.0% moisture), unchanged from 1970. Farm and warehouse loans and CCC purchases are available from harvest through May 31, 1972, and will mature June 30, 1972. While loan activity in 1971/72 may be substantial, no CCC acquisitions are anticipated. There will be no reseal program for 1971-crop soybeans.

### Increased Acreage in 1972

Reduced soybean supplies and continuing strong demand and strengthening prices relative to feed grains point to acreage expansion next spring. The 1971/72 soybean-corn price ratio (excluding payments) likely will be favorable for soybeans--probably around 3 to 1. Also, soybeans can be planted as a substitute crop in 1972 on the non-set aside acreages of feed grains and wheat without loss of history or program benefits. The increased set-aside goal for feed grains reduces total acreage available for planting crops and may be a deterrent to increased soybean acreage. The 1972 feed grain program is designed to achieve a feed grain set-aside of at least 38 million acres compared with 18 million in 1971.

In announcing the new feed grain program and a continuation of 1972-crop price support for soybeans at $2.25, USDA indicated a planted acreage goal of 63 million acres for corn in 1972 and 48 million for soybeans. The goal for soybeans is 4 to 5 million acres over 1971.

A special article in this situation report presents an econometric approach to forecasting U.S. soybean supply and demand. Under a specific set of assumptions, the model gives a conditional forecast of about 48 million acres planted to soybeans in 1972, a tenth more than in 1971.

### Production Up Slightly; Usage Will Be Cut

The 1971 soybean crop is estimated at 1,200 million bushels, nearly 6% above last year. Both acreage harvested and yields are up from 1970. Carryover on September 1 was 99 million bushels, 131 million below a year earlier. This brings prospective 1971/72 marketing year supplies to 1,299 million bushels compared with 1,366 million last season and 1,451 million in 1969/70.

Soybean use in 1971/72 may decline around 4% to 1.2 billion bushels, the first drop in utilization since 1963/64. This will leave carryout stocks of soybeans next September 1 slightly below this year's low level.

Prospects are that in the utilization of the 1971 soybean crop both crush and exports will be pinched.

### Crushings Down Moderately; Margins Decline

Soybean crushings may total around 750 million bushels, off slightly from 1970/71. The September-October crush totaled an estimated 118 million bushels, down about 2 million. Demand for soybean products is continuing strong but the dock strike has caused some backup in meal and a slowdown in the October crush. The season's crush estimate is based primarily on projected requirements for soybean meal.

The soybean spot processing margin this September-October averaged 15 cents per bushel, sharply below the 46 cents in the same 2 months of 1969 and 1970. Increased crushing capacity along with reduced supplies of soybeans and high prices likely will continue to put pressure on margins. For all of 1971/72 the margin probably will average below the 26 cents per bushel of last season and closer to the 1960-68 average of 12 cents.

The U.S. soybean processing industry has expanded its annual capacity from 750 million bushels in 1968/69 to nearly 900 million this fall. Highly favorable processing margins during the past 2 years and record crushes spurred the expansion. The industry in 1971/72 may be operating near the long-run average utilization rate of about 80% of capacity. During October the mills ran about 75% of capacity due partly to the dock strike.

### Soybean Exports to Decline

The total Census export value of the 433 million bushels of U.S. soybeans shipped during 1970/71 was a record $1,325 million, or $3.06 per bushel. When soybean oil and meal exports are included, the total 1970/71 value was $2 billion—an increase of 19% over the previous year.

Export demand for soybeans stays strong but U.S. supplies available for shipment are down this year and prices are higher. World supplies of competitive oils (mainly rapeseed, coconut, palm, peanut and sunflower), and protein meal (fish, peanut, and rapeseed) are likely to be greater.

U.S. soybean exports for 1971/72 are forecast around 400 million bushels compared with 433 million

Table 2.--Soybeans: Acreage, production and price, by States and Areas, crop years, 1968-71

| State and Area | Acreage harvested |  |  |  | Yield per acre harvested |  |  |  | Production |  |  |  | Price per bushel received by farmers Season average |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | 1968 | 1969 | 1970 | 1971 1/ | 1968 | 1969 | 1970 | 1971 2/ | 1968 | 1969 | 1970 | 1971 2/ | 1968 | 1969 | 1970 | 1971 3/ |
|  | 1,000 acres | 1,000 acres | 1,000 acres | 1,000 acres | Bu. | Bu. | Bu. | Bu. | Mil. bu. | Mil. bu. | Mil. bu. | Mil. bu. | Dol. | Dol. | Dol. | Dol. |
| North Carolina | 972 | 885 | 876 | 946 | 17.5 | 26.5 | 24.0 | 25.0 | 17.0 | 23.5 | 21.0 | 23.6 | 2.44 | 2.37 | 2.90 | 3.04 |
| South Carolina | 931 | 959 | 997 | 1,057 | 12.5 | 22.5 | 20.5 | 23.0 | 11.6 | 21.6 | 20.4 | 24.3 | 2.47 | 2.37 | 2.90 | 2.99 |
| Georgia | 472 | 467 | 528 | 639 | 15.0 | 24.0 | 22.5 | 26.0 | 7.1 | 11.2 | 11.9 | 16.6 | 2.45 | 2.44 | 2.95 | 2.95 |
| Alabama | 557 | 641 | 609 | 676 | 22.0 | 23.0 | 23.5 | 25.0 | 12.3 | 14.7 | 14.3 | 16.9 | 2.42 | 2.31 | 2.80 | 3.00 |
| Total Southeast | 2,932 | 2,952 | 3,010 | 3,318 | 16.8 | 24.0 | 22.6 | 24.8 | 48.0 | 71.0 | 67.6 | 81.4 | 2.44 | 2.37 | 2.89 | 3.00 |
| Kentucky | 466 | 485 | 558 | 764 | 26.5 | 28.0 | 27.0 | 30.0 | 12.3 | 13.6 | 15.1 | 22.9 | 2.39 | 2.32 | 2.80 | 2.92 |
| Tennessee | 1,193 | 1,193 | 1,229 | 1,315 | 21.0 | 24.0 | 23.0 | 26.0 | 25.1 | 28.6 | 28.3 | 34.2 | 2.39 | 2.31 | 2.75 | 2.86 |
| Mississippi | 2,120 | 2,290 | 2,336 | 2,172 | 27.0 | 22.0 | 24.0 | 24.0 | 57.2 | 50.4 | 56.1 | 52.1 | 2.45 | 2.39 | 2.90 | 3.00 |
| Arkansas | 3,989 | 4,228 | 4,313 | 4,227 | 22.0 | 20.5 | 22.5 | 21.0 | 87.8 | 86.7 | 97.0 | 88.8 | 2.45 | 2.41 | 2.90 | 3.00 |
| Louisiana | 1,436 | 1,608 | 1,688 | 1,671 | 27.0 | 19.0 | 22.5 | 23.0 | 38.8 | 30.6 | 38.0 | 38.4 | 2.44 | 2.36 | 2.85 | 3.02 |
| Total South Central | 9,204 | 9,804 | 10,124 | 10,149 | 24.7 | 22.7 | 23.8 | 24.8 | 221.2 | 209.9 | 234.5 | 236.4 | 2.42 | 2.36 | 2.84 | 2.95 |
| Ohio | 2,276 | 2,344 | 2,438 | 2,511 | 30.5 | 29.0 | 28.5 | 31.0 | 69.4 | 68.0 | 69.5 | 77.8 | 2.40 | 2.36 | 2.85 | 3.02 |
| Indiana | 3,246 | 3,311 | 3,311 | 3,377 | 32.0 | 32.5 | 31.5 | 34.0 | 103.9 | 107.6 | 104.3 | 114.8 | 2.40 | 2.29 | 2.80 | 2.93 |
| Illinois | 6,663 | 6,730 | 6,865 | 7,208 | 31.5 | 33.5 | 31.0 | 33.5 | 209.9 | 225.5 | 212.8 | 241.5 | 2.48 | 2.38 | 2.90 | 2.95 |
| Iowa | 5,561 | 5,450 | 5,832 | 5,540 | 32.0 | 33.0 | 32.0 | 33.0 | 178.0 | 179.8 | 186.6 | 182.8 | 2.44 | 2.36 | 2.80 | 2.94 |
| Missouri | 3,663 | 3,150 | 3,496 | 3,636 | 28.0 | 26.0 | 26.0 | 28.0 | 102.6 | 81.9 | 90.9 | 101.8 | 2.40 | 2.32 | 2.80 | 3.00 |
| Minnesota | 3,232 | 3,068 | 3,129 | 3,035 | 22.0 | 24.5 | 26.5 | 24.0 | 71.1 | 75.2 | 82.9 | 72.8 | 2.42 | 2.37 | 2.75 | 2.92 |
| Total Eastern Corn Belt | 24,641 | 24,053 | 25,071 | 25,307 | 29.3 | 29.8 | 29.2 | 30.6 | 734.9 | 738.0 | 747.0 | 791.5 | 2.42 | 2.35 | 2.82 |  |
| North Dakota | 215 | 185 | 176 | 208 | 15.5 | 16.0 | 15.0 | 19.0 | 3.3 | 3.0 | 2.6 | 4.0 | 2.33 | 2.28 | 2.70 | 2.80 |
| South Dakota | 300 | 243 | 255 | 245 | 17.5 | 24.5 | 17.5 | 24.0 | 5.2 | 6.0 | 4.5 | 5.9 | 2.37 | 2.26 | 2.70 | 2.91 |
| Nebraska | 782 | 766 | 812 | 666 | 23.5 | 33.5 | 22.0 | 25.0 | 18.4 | 25.7 | 17.9 | 16.6 | 2.38 | 2.24 | 2.75 | 2.86 |
| Kansas | 957 | 852 | 1,005 | 894 | 25.0 | 23.0 | 15.0 | 21.0 | 23.9 | 19.6 | 15.1 | 18.8 | 2.30 | 2.22 | 2.70 | 2.89 |
| Total Western Corn Belt | 2,254 | 2,046 | 2,248 | 2,013 | 20.4 | 24.2 | 17.4 | 22.2 | 50.8 | 54.3 | 40.1 | 45.3 | 2.34 | 2.25 | 2.71 | 2.96 |
| All others 4/ | 2,073 | 2,127 | 1,994 | 2,043 | 23.0 | 25.5 | 23.7 | 22.3 | 48.3 | 53.4 | 46.6 | 45.6 | 2.36 | 2.29 | 2.80 | 2.93 |
| United States | 41,104 | 40,982 | 42,447 | 42,830 | 26.8 | 27.5 | 26.8 | 28.0 | 1,103.1 | 1,126.3 | 1,135.8 | 1,200.2 | 2.43 | 2.35 | 2.84 | 2.96 |

1/ Preliminary. 2/ November 1 indications. 3/ September-October average. 4/ New York, New Jersey, Pennsylvania, Michigan, Wisconsin, Delaware, Maryland, Virginia, Florida, Oklahoma and Texas.

Table 3.--Soybeans: U.S. supply and disposition, 1953-71

| Year beginning September | Supply |  |  |  |  |  |  |  | Disposition |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  | Stocks, September 1 |  |  |  |  |  |  | Domestic disappearance |  |  |  |  |  |  |  |
|  |  |  | Government 1/ |  |  |  |  |  |  | Used for seed |  |  |  |  |  |  |
|  | Production | Trade 1/ | Owned by CCC | Under loan | Reseal | Total | Total stocks | Total supply | Crushings | Total | Per acre planted 2/ | Feed | Residual 3/ | Total domestic use | Exports | Total disposition |
|  | -- Million bushel -- |  |  |  |  |  |  |  |  |  | Bushel |  | -- Million bushel -- |  |  |  |
| 1953 | 269.2 | 18.7 | 2.2 | 1.5 | --- | 3.7 | 22.4 | 291.6 | 217.8 | 22.9 | 1.24 | 1.4 | 1.3 | 243.4 | 40.1 | 283.5 |
| 1954 | 341.1 | 8.0 | 4/ | .1 | --- | 0.1 | 8.1 | 349.2 | 241.4 | 23.4 | 1.19 | 1.6 | 2.9 | 269.3 | 57.3 | 326.6 |
| 1955 | 373.7 | 13.2 | 8.2 | 1.2 | --- | 9.4 | 22.6 | 396.3 | 281.9 | 25.8 | 1.19 | 1.6 | -2.6 | 306.7 | 68.6 | 375.3 |
| 1956 | 449.3 | 20.9 | 4/ | .1 | --- | .1 | 21.0 | 470.3 | 313.6 | 26.4 | 1.20 | 1.7 | 13.3 | 355.0 | 83.7 | 438.7 |
| 1957 | 483.4 | 24.2 | 6.2 | 1.2 | --- | 7.4 | 31.6 | 515.0 | 350.9 | 29.5 | 1.17 | 1.5 | 1.9 | 383.8 | 88.4 | 472.2 |
| 1958 | 580.2 | 26.2 | 12.7 | 3.9 | --- | 16.6 | 42.8 | 623.0 | 398.8 | 27.4 | 1.17 | 1.9 | 2.1 | 430.2 | 105.0 | 535.2 |
| 1959 | 532.9 | 29.0 | 44.6 | 5/ | 14.2 | 58.8 | 87.8 | 620.7 | 394.0 | 29.3 | 1.20 | 1.5 | 4.2 | 429.0 | 139.9 | 568.9 |
| 1960 | 555.1 | 36.9 | 14.7 | .2 | --- | 14.9 | 51.8 | 606.9 | 406.1 | 32.5 | 1.17 | 1.3 | 5.2 | 445.1 | 134.7 | 579.8 |
| 1961 | 678.6 | 27.1 | --- | --- | --- | --- | 27.1 | 705.7 | 431.4 | 33.3 | 1.17 | 1.3 | 12.0 | 478.0 | 149.4 | 627.4 |
| 1962 | 669.2 | 19.8 | 47.0 | .4 | 11.1 | 58.5 | 78.3 | 747.5 | 472.8 | 34.6 | 1.17 | 1.1 | 12.5 | 521.0 | 180.5 | 701.5 |
| 1963 | 699.2 | 41.2 | 2.5 | 2.2 | 0.1 | 4.8 | 46.0 | 745.2 | 436.8 | 36.0 | 1.14 | .9 | 17.0 | 490.7 | 187.2 | 677.9 |
| 1964 | 700.9 | 41.3 | 11.8 | 11.2 | 3.0 | 26.0 | 67.3 | 768.2 | 479.0 | 40.3 | 1.14 | .9 | 6.1 | 526.3 | 212.2 | 738.5 |
| 1965 | 845.6 | 29.7 | --- | --- | --- | --- | 29.7 | 875.3 | 537.5 | 42.9 | 1.15 | .9 | 7.8 | 589.2 | 250.6 | 839.8 |
| 1966 | 928.5 | 35.6 | --- | --- | --- | --- | 35.6 | 964.1 | 559.4 | 47.1 | 1.15 | 1.0 | 4.9 | 612.4 | 261.6 | 874.0 |
| 1967 | 976.1 | 56.2 | 7.4 | 21.5 | 5.0 | 33.9 | 90.1 | 1,066.2 | 576.4 | 47.8 | 1.14 | .9 | 8.2 | 633.3 | 266.6 | 899.9 |
| 1968 | 1,103.1 | 28.4 | 29.4 | 67.0 | 41.5 | 137.9 | 166.3 | 1,269.4 | 605.9 | 47.7 | 1.13 | .8 | 3.8 | 658.2 | 286.8 | 945.0 |
| 1969 | 1,126.3 | 15 | 171.4 | 6/61.9 | 103.5 | 336.8 | 324.4 | 1,450.7 | 737.3 | 48.9 | 1.13 | .9 | .9 | 788.0 | 432.6 | 1,220.6 |
| 1970 7/ | 1,135.8 | 33 | 150.2 | 5.1 | 41.6 | 196.9 | 230.1 | 1,365.9 | 760.2 | 52.0 | 1.19 | .8 | 20.5 | 833.5 | 433.2 | 1,266.7 |
| 1971 8/ | 1,200 | 88 | 2.5 | 3.0 | 5.9 | 11 | 99 | 1,299 | 750 | 57 |  |  | [12] | 819 | 400 | 1,219 |
| 1972 9/ |  |  |  |  |  |  | 80 |  |  |  |  |  |  |  |  |  |

1/ Estimates. 2/ In the following year. 3/ Mostly statistical discrepancies. 4/ Less than 50,000 bushels. 5/ Small quantities included with reseal. 6/ Some of these soybeans probably had been redeemed prior to September 1. 7/ Preliminary. 8/ Production indicated November 1. Disposition is forecast. 9/ Forecast.

Table 4 --Estimated number of soybean oil mills and processing capacity in the United States, 1960-71

| Year beginning September | Processing mills 1/ | Annual processing capacity |  |  |  | Average per mill |  |
|---|---|---|---|---|---|---|---|
|  |  | Total 2/ | Utilized 3/ | Excess 4/ | Ratio of utilized to total | Processing capacity | Capacity utilized 3/ |
|  | Number | Mil. bu. | Mil. bu. | Mil. bu. | Percent | Mil. bu. | Mil. bu. |
| 1960 | 125 | 525 | 406 | 119 | 77 | 4.2 | 3.2 |
| 1961 | 131 | (535) | 431 | 104 | 81 | 4.1 | 3.3 |
| 1962 | 130 | 550 | 473 | 77 | 86 | 4.2 | 3.6 |
| 1963 | 132 | 575 | 437 | 138 | 76 | 4.4 | 3.3 |
| 1964 | 125 | 585 | 479 | 106 | 82 | 4.7 | 3.8 |
| 1965 | 125 | 600 | 537 | 63 | 89 | 4.8 | 4.3 |
| 1966 | 129 | 650 | 559 | 91 | 86 | 5.0 | 4.3 |
| 1967 | 135 | 750 | 576 | 174 | 77 | 5.5 | 4.3 |
| 1968 | 134 | 750 | 606 | 144 | 81 | 5.6 | 4.5 |
| 1969 | 132 | 800 | 737 | 63 | 92 | 6.1 | 5.6 |
| 1970 5/ | 130 | 875 | 760 | 115 | 87 | 6.7 | 5.8 |
| 1971 6/ | 125 | 900 | 750 | 150 | 83 | 7.2 | 6.0 |

1/ Estimates developed by ERS from Census data and trade directories. Includes cottonseed and other oilseed mills that process significant quantities of soybeans. 2/ Trade estimates except for 1961. Data in brackets are USDA interpolations. Estimates shown here are approximations of capacity at the beginning of the marketing year. Capacity fluctuates during any year due to new plants coming into operation and additions to existing mills, some mills becoming dormant (due to explosions, fires, strikes, etc.) and dismantling of older mills. 3/ Soybeans actually crushed. 4/ Difference between total capacity and soybeans utilized (crushed). 5/ Preliminary. 6/ Forecast.

Table 5 .--Soybeans: Annual value of products per bushel of soybeans processed and spot price spread, 1960-70

| Year beginning September | Value of products per bushel |  |  |  |  |  |  | Soybean price |  | Spread between value of products and soybean price |  |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  | Soybean oil |  |  | Soybean meal |  |  | Total value | Received by farmers 3/ | No. 1 yellow, Illinois points 4/ | Received by farmers | No. 1 yellow, Illinois points |
|  | Yield 1/ | Price 2/ | Value | Yield 1/ | Price 2/ | Value |  |  |  |  |  |
|  | Pounds | Cents | Dollars | Pounds | Cents | Dollars | Dollars | Dollars | Dollars | Dollars | Dollars |
| 1960 | 10.39 | 11.2 | 1.23 | 46.97 | 3.00 | 1.41 | 2.64 | 2.13 | 2.53 | .51 | .11 |
| 1961 | 10.92 | 9.7 | 1.06 | 47.11 | 3.11 | 1.47 | 2.53 | 2.28 | 2.41 | .25 | .12 |
| 1962 | 10.74 | 8.8 | .94 | 46.94 | 3.57 | 1.67 | 2.61 | 2.34 | 2.50 | .27 | .12 |
| 1963 | 10.92 | 8.4 | .92 | 48.02 | 3.58 | 1.72 | 2.64 | 2.51 | 2.59 | .13 | .05 |
| 1964 | 10.89 | 11.2 | 1.22 | 47.77 | 3.48 | 1.66 | 2.88 | 2.62 | 2.81 | .26 | .07 |
| 1965 | 10.59 | 11.8 | 1.26 | 47.53 | 4.02 | 1.91 | 3.17 | 2.54 | 2.91 | .63 | .26 |
| 1966 | 10.70 | 10.4 | 1.11 | 47.66 | 3.98 | 1.90 | 3.01 | 2.75 | 2.86 | .26 | .15 |
| 1967 | 10.57 | 8.6 | .91 | 47.71 | 3.82 | 1.82 | 2.73 | 2.49 | 2.61 | .24 | .12 |
| 1968 | 10.61 | 8.2 | .87 | 47.43 | 3.76 | 1.78 | 2.66 | 2.43 | 2.54 | .23 | .12 |
| 1969 | 10.66 | 11.0 | 1.17 | 47.36 | 3.89 | 1.84 | 3.01 | 2.44 | 2.53 | .57 | .48 |
| 1970 5/ | 10.83 | 12.8 | 1.38 | 47.39 | 3.96 | 1.88 | 3.26 | 2.89 | 3.00 | .37 | .26 |
| 1971 |  |  |  |  |  |  |  |  |  |  |  |

1/ Actual outturns of oil and meal as calculated from Bureau of the Census reports. 2/ Simple average of monthly cash prices per pound using the following quotations: Soybean oil, crude, tank cars, f.o.b. Decatur, Ill; soybean meal, bulk, 44% protein, Decatur, Ill. 3/ Season average price received by farmers weighted by the estimated percent of the crop sold each month. 4/ Simple average of monthly prices. 5/ Preliminary.

Table 6 .--Soybeans: Monthly average spot price spread between soybean prices and values of soybean oil and meal per bushel of soybeans processed, 1960-71 1/

| Year beginning September | September | October | November | December | January | February | March | April | May | June | July | August | Annual average |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | --Cents per bushel-- |  |  |  |  |  |  |  |  |  |  |  |  |
| 1960 | 21 | 13 | 10 | 15 | 10 | 11 | 6 | 4 | 1 | 6 | 16 | 20 | 11 |
| 1961 | 30 | 14 | 13 | 15 | 14 | 7 | 8 | 7 | 6 | 6 | 6 | 17 | 12 |
| 1962 | 43 | 17 | 15 | 9 | 9 | 10 | 7 | 2 | 3 | 7 | 10 | 10 | 12 |
| 1963 | 1 | 8 | 5 | 2 | 2 | 1 | 1 | 0 | 3 | 8 | 13 | 6 | 5 |
| 1964 | 14 | 16 | 15 | 9 | 1 | 2 | 5 | 0 | -4 | -1 | 8 | 19 | 7 |
| 1965 | 45 | 51 | 51 | 27 | 36 | 27 | 9 | 11 | 9 | 13 | 15 | 25 | 26 |
| 1966 | 33 | 23 | 12 | 18 | 15 | 16 | 12 | 8 | 6 | 10 | 9 | 22 | 15 |
| 1967 | 32 | 11 | 12 | 7 | 8 | 14 | 11 | 7 | 6 | 9 | 13 | 16 | 12 |
| 1968 | 36 | 29 | 12 | 1 | -1 | 4 | 9 | 4 | 5 | 7 | 6 | 22 | 12 |
| 1969 | 37 | 61 | 45 | 56 | 59 | 77 | 53 | 50 | 25 | 24 | 39 | 48 | 48 |
| 1970 2/ | 47 | 45 | 36 | 38 | 25 | 16 | 15 | 6 | 10 | 22 | 26 | 23 | 26 |
| 1971 2/ | 14 | 16 |  |  |  |  |  |  |  |  |  |  |  |

1/ Spot spreads are calculated from simple average monthly cash prices using the following quotations: Soybean prices, No. 1 yellow, Illinois Points; soybean oil, crude, tank cars, f.o.b. Decatur, Ill.; soybean meal, bulk, 44% protein, Decatur Ill. These data do not reflect actual operating margins since prices are simple averages and do not take into account location differentials or actual purchases and sales of soybeans, soybean oil and soybean meal. 2/ Preliminary.

bushels shipped last year. Virtually all major destinations may share in the decline. Crushing margins abroad will be reduced since soybean processing capacity has expanded in Western Europe and Asia, the major markets. Much of the expansion in recent years has been the solvent extraction type of operation particularly designed for processing soybeans.

## SOYBEAN OIL

### Domestice Use to Rise

Larger carryover stocks this fall plus slightly smaller oil production from the reduced crush point to a supply of about 8.8 billion pounds of soybean oil, about the same as 1970/71.

Stocks on October 1 totaled 755 million pounds (crude and refined)—about 39% above a year ago. This level equals a little more than a month's total requirements.

Domestic disappearance is forecast at 6½ billion pounds, up slightly from 1970/71. On a monthly basis, the rate may average around 540 million pounds compared with 522 million for the year just ended. Increased population and the trend toward use of more soybean oil per person will help boost consumption.

As for competitive commodities, production of lard in 1971/72 is estimated to decline 7% (150 million pounds) from the 2.05 billion pounds for the year just ended. Cottonseed oil output may be up slightly. Little change is in prospect for corn and peanut oil supplies. Palm oil imports, which increased sharply in 1970/71, probably will continue heavy.

### Exports to Decline

Soybean oil exports during 1971/72 probably will decline to around 1.5 billion pounds—down some 15% from last year's record. Foreign demand for edible oils continues to increase but U.S. export availabilities are limited. Thus, dollar exports may face stiffer competition, as sharply increased supplies of competitive oils from foreign countries materialized. Also, U.S. soybean oil prices likely will continue at relatively high levels. Soybean oil exports may prove to rely more heavily on P.L. 480 programs than in 1970/71. These programs are not involved in the recent foreign aid discussions in Congress.

Soybean oil exports last season totaled 1,742 million pounds, a new record and one-fourth above 1969/70. World demand for soybean oil continued strong throughout the year and U.S. oil was competitively priced in relation to sunflowerseed and peanut oils and often with soybean oil produced abroad. Exports moving under P.L. 480 programs again totaled 0.8 billion pounds but accounted for only 44% of the soybean oil moving abroad. Barter and other commercial sales increased sharply above the 0.6 billion pounds of 1969/70 to nearly 1 billion pounds. Thanks to the strong world market, the proportion of commercial sales increased from 15% in 1968/69 to 56% in 1970/71.

U.S. soybean oil exports

| Export financing | Year beginning October | | | |
|---|---|---|---|---|
| | 1968/69 | 1969/70 | 1970/71[1] | 1971/72 |
| | *Million pounds* | *Million pounds* | *Million pounds* | *Million pounds* |
| Barter | 75 | 444 | 650 | |
| CCC credits | --- | 53 | 200 | |
| Other | 54 | 145 | 131 | |
| Total commercial | 129 | 642 | 981 | |
| Foreign sales | 573 | 604 | 548 | |
| Donations | 168 | 174 | 213 | |
| Total P.L. 480 | 741 | 778 | 761 | |
| Grand total | 870 | 1,420 | 1,742 | [2] 1,500 |
| %P.L. 480 | 85 | 55 | 44 | |

[1] Preliminary. [2] Forecast.

### Oil Prices Relatively High

Prices of crude soybean oil at Decatur have trended upward sharply during the past 3 marketing years. They have nearly doubled, rising from 7½ cents per pound in the summer of 1968 to 14½ cents this past summer. The 1970/71 season average price was 12.8 cents, about 1½ cents above the year before.

Record domestic offtake of soybean oil in 1971/72 and large exports will tend to provide strength to the market. But because of stiffening foreign competition, soybean oil prices probably will not average quite as high as 1970/71. Prices this October-November averaged under 13 cents compared with over 14 cents a year ago.

## SOYBEAN MEAL

### Prospective Output Near 1970/71

Production of soybean meal for the marketing year that began October 1 is forecast at 17.8 million tons, down slightly from 1970/71.

Prospective domestic use slightly exceeds last year's 13.4 million tons. Factors maintaining the strong demand include a possible small increase in high-protein consuming animals and more favorable feeding ratios. Also, the prospect for a moderate increase in grain concentrate feeding means more protein feed will be needed to balance livestock rations. Changes in consumption of feed grains and protein tend to parallel each other.

Domestic soybean meal consumption trended upward during the past decade from about 9 million tons in 1960/61 to 13½ million for the year just ended. Primary factors have been increasing livestock production, increased feeding of high-protein concentrates per animal, and growth of the mixed feed industry. On a per animal unit basis, soybean meal usage during the past decade has climbed from 146 pounds to around 190 pounds.

## Table 7.--Soybeans, soybean meal and soybean oil: U.S. exports by country of destination, and total value, 1966-70

| Continent and country of destination | Soybeans 1/ | | | | | Soybean meal | | | | | Soybean oil | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Year beginning September | | | | | Year beginning October | | | | | Year beginning October | | | | |
| | 1966 | 1967 | 1968 | 1969 | 1970 2/ | 1966 | 1967 | 1968 | 1969 | 1970 2/ | 1966 | 1967 | 1968 | 1969 | 1970 2/ |
| | 1,000 bu. | 1,000 bu. | 1,000 bu. | 1,000 bu. | 1,000 bu. | 1,000 tons | 1,000 tons | 1,000 tons | 1,000 tons | 1,000 tons | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. | Mil. lb. |
| North America | | | | | | | | | | | | | | | |
| Canada | 24,202 | 21,736 | 37,856 | 69,952 | 42,162 | 238.4 | 227.8 | 262.9 | 270.9 | 242.1 | 22 | 25 | 29 | 51 | 50 |
| Dominican Republic | --- | --- | --- | 37 | 324 | 4/ | 4/ | 4/ | .4 | .9 | 9 | 50 | 28 | 25 | 24 |
| Haiti | 3/ | --- | --- | --- | --- | --- | --- | --- | .2 | 1.2 | 14 | 17 | 19 | 19 | 26 |
| Mexico | 259 | 308 | 824 | 5,004 | 2,192 | 17.0 | 2.7 | .9 | 2.8 | 116.3 | 5/ | 11 | 4 | 18 | 1 |
| Panama | --- | --- | --- | --- | 37 | 2.5 | 1.1 | 1.4 | 1.0 | 3.5 | 13 | 11 | 5/ | 17 | 23 |
| Otber | 9 | 3/ | --- | 358 | 109 | 22.3 | 21.6 | 20.9 | 27.1 | 60.3 | 20 | 14 | 19 | 21 | 23 |
| Total | 24,470 | 22,044 | 38,680 | 75,351 | 44,824 | 280.2 | 253.2 | 286.0 | 302.4 | 424.3 | 78 | 128 | 99 | 151 | 147 |
| South America | | | | | | | | | | | | | | | |
| Argentina | 2 | 1 | 4 | 3/ | 2 | .4 | .2 | 4/ | --- | --- | 5/ | --- | 2 | --- | 5/ |
| Brazil | --- | 6 | --- | --- | 2 | 4/ | .1 | --- | --- | --- | 28 | 21 | 9 | 10 | 6 |
| Chile | --- | --- | --- | --- | --- | --- | --- | --- | 3.3 | 10.1 | 14 | 33 | 31 | 38 | 58 |
| Colombia | --- | --- | --- | --- | 837 | --- | --- | --- | --- | --- | 18 | 9 | 8 | 17 | 17 |
| Ecuador | --- | --- | --- | --- | --- | .1 | --- | --- | --- | --- | 10 | 6 | 9 | 12 | 23 |
| Peru | 1 | --- | --- | 202 | --- | .3 | 4/ | --- | 4/ | --- | 14 | 5 | 9 | 59 | 111 |
| Venezuela | 1,249 | 1,336 | 1,650 | 2,070 | 3,042 | .1 | .1 | .1 | 4/ | 2.9 | 5 | 2 | 3 | 5/ | 5/ |
| Otber | 3/ | --- | --- | --- | --- | .1 | 4/ | .2 | .2 | .3 | 4 | 1 | 5/ | 3 | 5 |
| Total | 1,252 | 1,343 | 1,654 | 2,272 | 3,883 | 1.0 | .4 | .3 | 3.5 | 13.3 | 93 | 77 | 71 | 139 | 219 |
| Western Europe | | | | | | | | | | | | | | | |
| Austria | --- | --- | --- | --- | 2 | 7.3 | 7.0 | 1.3 | 5.2 | 1.5 | --- | --- | --- | --- | 5/ |
| Belgium-Luxumbourg | 8,812 | 8,698 | 10,237 | 16,115 | 13,222 | 221.4 | 240.7 | 166.9 | 219.0 | 308.8 | 5/ | 5/ | 5/ | 6 | 5/ |
| Denmark | 14,843 | 15,516 | 11,797 | 18,408 | 21,442 | 109.4 | 66.0 | 18.3 | 32.5 | 85.6 | 5/ | --- | 5/ | 5/ | 5/ |
| Finland | 298 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 5/ | --- | 5/ | 5/ | --- |
| France | 2,241 | 551 | 284 | 4,988 | 13,223 | 431.5 | 495.4 | 471.8 | 622.8 | 712.1 | 5/ | 5/ | 5/ | 5/ | --- |
| Germany, West | 32,657 | 31,966 | 30,515 | 41,778 | 52,980 | 458.1 | 508.2 | 636.5 | 855.9 | 994.4 | 5/ | 5/ | 5/ | 2 | 5/ |
| Greece | --- | --- | --- | --- | 2 | 6.3 | 2.1 | .3 | --- | --- | 23 | --- | --- | --- | 12 |
| Ireland | --- | --- | --- | --- | --- | 22.7 | 31.0 | 43.2 | 60.4 | 36.5 | --- | --- | --- | --- | --- |
| Italy | 18,041 | 14,788 | 16,428 | 25,413 | 25,978 | 192.0 | 190.5 | 231.9 | 309.5 | 330.8 | 5/ | 5/ | 5/ | 5/ | 5/ |
| Netberlands | 35,991 | 36,835 | 42,660 | 57,397 | 57,381 | 417.9 | 546.9 | 515.8 | 659.0 | 675.4 | 5/ | 5/ | 5/ | 1 | 1 |
| Norway | 5,730 | 4,959 | 4,247 | 5,434 | 7,462 | --- | --- | 4/ | 4/ | 2.2 | 5/ | 5/ | --- | 5/ | 5/ |
| Spain | 27,356 | 29,498 | 31,172 | 36,349 | 38,691 | 8.1 | 15.0 | 96.1 | 34.1 | 10.7 | 6 | 1 | --- | --- | --- |
| Sweden | 2 | 1 | 3 | 8 | 309 | .2 | .5 | .3 | 1.1 | .1 | 5/ | 5/ | 5/ | 5/ | 5/ |
| Switzerland | 422 | 431 | 380 | 495 | 188 | 20.2 | 9.4 | 64.3 | 111.8 | 69.1 | --- | --- | --- | --- | 2 |
| United Kingdom | 3,840 | 3,919 | 4,840 | 7,510 | 5,892 | 86.1 | 82.0 | 38.5 | 42.9 | 100.1 | 5/ | 5/ | 1 | 12 | 10 |
| Other | 3/ | 3/ | 352 | 1,047 | 1,600 | 16.3 | 28.0 | 33.4 | 18.5 | 9.2 | 9 | 4 | 2 | 5 | 1 |
| Total | 150,235 | 147,163 | 150,915 | 214,942 | 238,372 | 1,997.5 | 2,222.7 | 2,318.6 | 2,972.7 | 3,336.5 | 38 | 6 | 3 | 26 | 26 |
| Eastern Europe | | | | | | | | | | | | | | | |
| Bulgaria | --- | --- | --- | 17 | --- | 27.8 | 41.4 | 32.7 | 40.3 | 32.8 | --- | --- | --- | --- | --- |
| Czechoslovakia | 761 | 149 | 240 | 470 | 115 | 16.6 | 11.6 | 2.2 | 36.2 | 99.4 | --- | --- | --- | --- | --- |
| Hungary | 451 | --- | --- | 499 | 1,187 | 30.3 | 50.4 | 28.6 | 170.6 | 156.0 | --- | --- | --- | --- | --- |
| Poland | 1,714 | 1,256 | 1,381 | 4,928 | 3,063 | 51.2 | 80.6 | 103.0 | 109.9 | 112.3 | 14 | 16 | 4 | 10 | 7 |
| U.S.S.R. (Europe and Asia) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Yugoslavia | 362 | --- | --- | --- | 1,127 | 159.3 | 113.7 | 143.3 | 173.8 | 186.8 | 115 | --- | --- | 1 | 271 |
| Other | 170 | --- | 195 | --- | 567 | --- | 5.7 | 11.0 | 5.7 | --- | --- | --- | 5/ | 1 | --- |
| Total | 3,458 | 1,405 | 1,816 | 5,914 | 6,059 | 285.3 | 303.3 | 320.9 | 536.5 | 587.4 | 128 | 16 | 4 | 12 | 278 |
| Africa | | | | | | | | | | | | | | | |
| Algeria | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 14 | --- | 3 | 1 | --- |
| Egypt | --- | --- | --- | --- | --- | .8 | .5 | 1.8 | 3.6 | 6.0 | 58 | --- | --- | 29 | 2 |
| Morocco | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 11 | 55 | 28 | 53 | 90 |
| Tunisia | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 98 | 97 | 57 | 95 | 76 |
| Otber | --- | --- | --- | --- | 307 | 6.7 | 4/ | 4/ | --- | 6.5 | 16 | 12 | 19 | 35 | 43 |
| Total | --- | --- | --- | --- | 307 | 7.5 | .5 | 1.8 | 3.6 | 12.5 | 197 | 164 | 107 | 213 | 211 |
| Asia and Oceania | | | | | | | | | | | | | | | |
| Australia | 4 | 4 | 4 | 211 | 181 | 36.3 | 27.1 | 25.4 | 34.3 | 33.0 | 5 | 8 | 2 | 8 | 8 |
| Hong Kong | 9 | 73 | 57 | 96 | 38 | 1.1 | 3.1 | 1.7 | 2.0 | .4 | 3 | 12 | 4 | 12 | 2 |
| India | 1 | 4 | --- | --- | --- | 1.3 | 2.4 | .6 | 4/ | .5 | 229 | 196 | 328 | 248 | 284 |
| Iran | 3/ | 11 | --- | --- | --- | 2.1 | 2.5 | 1.8 | 1.1 | 1.1 | 8 | 7 | 48 | 159 | 134 |
| Israel | 9,434 | 9,515 | 6,541 | 8,279 | 12,793 | .1 | 4/ | 4/ | 4/ | --- | 33 | 49 | 34 | 38 | 41 |
| Japan | 60,716 | 73,739 | 69,883 | 101,382 | 102,791 | 2.4 | 16.3 | 19.9 | 83.9 | 22.0 | 5/ | --- | 2 | 11 | 5/ |
| Korea, Soutb | 801 | 639 | 632 | 1,338 | 2,519 | --- | 4/ | 3.9 | 20.1 | 26.1 | 1 | 3 | 2 | 3 | 4 |
| Pakistan | --- | --- | --- | --- | 2 | --- | --- | --- | --- | --- | 147 | 224 | 114 | 355 | 278 |
| Philippines | 11 | --- | --- | --- | --- | 30.4 | 47.7 | 43.8 | 49.1 | 53.8 | 10 | 3 | 5/ | 5/ | 5/ |
| South Viet Nam | --- | --- | --- | --- | --- | .4 | --- | .2 | .4 | 21.3 | 30 | 37 | 41 | 6 | 29 |
| Taiwan | 10,776 | 10,632 | 16,590 | 21,226 | 19,582 | --- | --- | --- | --- | --- | 13 | 5 | --- | 9 | 18 |
| Turkey | --- | --- | --- | --- | --- | --- | --- | --- | 1.1 | --- | 8 | 3 | 5/ | 6 | 31 |
| Other | 225 | 5 | 2 | 1,591 | 1,801 | 11.0 | 20.3 | 13.4 | 24.7 | 27.0 | 55 | 24 | 10 | 22 | 31 |
| Total | 82,177 | 94,622 | 93,709 | 134,124 | 139,707 | 85.1 | 119.4 | 116.7 | 216.7 | 185.2 | 542 | 571 | 585 | 879 | 860 |
| Total | 261,591 | 266,577 | 286,776 | 432,602 | 433,152 | 2,656.6 | 2,899.5 | 3,044.3 | 4,035.4 | 4,559.3 | 1,077 | 963 | 870 | 1,420 | 1,742 |
| Value of Exports | | | | | | | | | | | | | | | |
| Total (Mil. dol.) | 800 | 749 | 772 | 1,149 | 1,325 | 233 | 243 | 251 | 337 | 405 | 142 | 106 | 89 | 176 | 250 |
| Per unit | $3.06 | $2.81 | $2.69 | $2.66 | $3.06 | $87.79 | $83.81 | $82.45 | $83.52 | $88.83 | 13.2¢ | 11.0¢ | 10.2¢ | 12.4¢ | 14.4¢ |

---

1/ Census export data to Canada overstated since Canada contains major transit ports and ultimate destination was unknown at time of shipment. Transshipment through Canadian ports are mainly destined for Western Europe and Asian countries. Census data to these countries are understated by the amount of transshipment via Canada. 2/ Preliminary. 3/ Less than 500 bushels. 4/ Less than 50 tons. 5/ Less than 500,000 pounds.

Table 8.--Soybean oil: Supply, disposition, oil equivalent of exports of soybeans, and price, 1949-71

| Year beginning October | Supply |  |  | Disposition |  |  |  | Soybeans (oil equivalent of exports) 1/ | Price per pound (tank cars) |  |
|---|---|---|---|---|---|---|---|---|---|---|
|  | Production | Stocks, October 1 | Total | Exports | Shipments to U.S. Territories | Domestic disappearance |  |  |  |  |
|  |  |  |  |  |  | Total | Per capita |  | Crude, Decatur | Refined, N.Y. |
|  | -- Million pounds -- |  |  |  |  |  | Pounds | Million pounds | -- Cents -- |  |
| 1949 | 1,937 | 113 | 2,050 | 291 | --- | 1,646 | 10.9 | 128 | 12.3 | --- |
| 1950 | 2,454 | 113 | 2,567 | 490 | --- | 1,906 | 12.4 | 272 | 17.8 | 21.5 |
| 1951 | 2,444 | 171 | 2,615 | 271 | --- | 2,150 | 13.7 | 167 | 11.3 | 14.1 |
| 1952 | 2,536 | 194 | 2,730 | 93 | --- | 2,462 | 15.5 | 320 | 12.1 | 14.8 |
| 1953 | 2,350 | 174 | 2,525 | 71 | --- | 2,326 | 14.4 | 436 | 13.5 | 16.2 |
| 1954 | 2,711 | 127 | 2,838 | 50 | --- | 2,609 | 15.9 | 666 | 11.9 | 14.8 |
| 1955 | 3,143 | 179 | 3,322 | 556 | --- | 2,539 | 15.2 | 741 | 12.5 | 15.5 |
| 1956 | 3,431 | 227 | 3,658 | 807 | --- | 2,565 | 15.0 | 937 | 12.7 | 15.4 |
| 1957 | 3,800 | 286 | 4,085 | 804 | --- | 3,051 | 17.6 | 939 | 10.8 | 13.7 |
| 1958 | 4,251 | 2/281 | 4,532 | 930 | --- | 3,304 | 18.8 | 1,209 | 9.5 | 11.8 |
| 1959 | 4,338 | 298 | 4,636 | 953 | --- | 3,376 | 18.8 | 1,552 | 8.3 | 10.4 |
| 1960 | 4,420 | 308 | 4,728 | 3/721 | --- | 3,329 | 18.2 | 1,431 | 11.3 | 13.6 |
| 1961 | 4,790 | 677 | 5,467 | 3/1,308 | --- | 3,540 | 19.0 | 1,685 | 9.5 | 11.7 |
| 1962 | 5,091 | 618 | 5,709 | 3/1,165 | --- | 3,624 | 19.2 | 1,984 | 8.9 | 11.1 |
| 1963 | 4,822 | 920 | 5,742 | 3/1,106 | --- | 4,058 | 21.2 | 2,103 | 8.5 | 10.7 |
| 1964 | 5,146 | 578 | 5,724 | 3/1,340 | 17 | 4,069 | 21.0 | 2,265 | 11.3 | 13.4 |
| 1965 | 5,800 | 297 | 6,097 | 923 | 25 | 4,687 | 23.9 | 2,764 | 11.8 | 13.6 |
| 1966 | 6,076 | 462 | 6,538 | 1,077 | 28 | 4,837 | 24.4 | 2,930 | 10.1 | 12.4 |
| 1967 | 6,032 | 596 | 6,628 | 963 | 30 | 5,096 | 25.4 | 2,972 | 8.4 | 10.5 |
| 1968 | 6,531 | 540 | 7,071 | 870 | 29 | 5,756 | 28.4 | 3,148 | 8.4 | 10.4 |
| 1969 | 7,904 | 415 | 8,319 | 1,420 | 29 | 6,328 | 30.9 | 4,941 | 11.2 | 13.1 |
| 1970 4/ | 8,261 | 543 | 8,804 | 1,742 | 40 | 6,267 | 30.3 | 4,757 | 12.8 | 14.6 |
| 1971 5/ | 8,100 | 755 | 8,855 | 1,500 | 55 | ,500 |  | 4,400 | 6/13.2 | 6/14.6 |
| 1972 |  | 800 |  |  |  |  |  |  |  |  |

---

1/ Calculated at 11.0 pounds of oil per bushel. 2/ Adjusted to new Census basis which includes hydrogenated oils and stearin. 3/ Includes estimates of foreign donations of fats and oils, not reported by Census, 1960-64. 4/ Preliminary. 5/ Forecast except October 1 stocks. 6/ October average.

Table 9.--Soybean oil: Utilization, by products, 1949-70

| Year beginning October | Food |  |  |  |  | Non-Food |  |  |  |  |  |  | Total domestic disappearance |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | Shortening | Margarine | Cooking and salad oils 1/ | Other edible | Total | Paint and varnish | Resins and plastics | Other drying oil products | Linoleum and oilcloth | Other inedible 2/ | Foots and loss | Total |  |
|  | -- Million pounds -- |  |  |  |  |  |  |  |  |  |  |  |  |
| 1949 | 776 | 265 | 288 |  | 1,329 | 112 | --- | --- | 30 | 97 | 78 | 317 | 1,646 |
| 1950 | 795 | 459 | 344 |  | 1,599 | 91 | 62 | 11 | 7 | 50 | 87 | 308 | 1,906 |
| 1951 | 800 | 583 | 404 |  | 1,786 | 109 | 68 | 11 | 19 | 60 | 97 | 364 | 2,150 |
| 1952 | 879 | 735 | 462 |  | 2,077 | 155 | 61 | 9 | 12 | 42 | 106 | 386 | 2,462 |
| 1953 | 905 | 661 | 437 |  | 2,002 | 138 | 56 | 7 | 7 | 32 | 84 | 324 | 2,326 |
| 1954 | 979 | 741 | 545 |  | 2,264 | 138 | 71 | 11 | 2 | 15 | 107 | 344 | 2,609 |
| 1955 | 803 | 725 | 668 |  | 2,196 | 115 | 71 | 9 | 3 | 39 | 107 | 344 | 2,539 |
| 1956 | 764 | 836 | 627 |  | 2,227 | 117 | 72 | 9 | 1 | 31 | 107 | 337 | 2,565 |
| 1957 | 993 | 1,041 | 692 |  | 2,726 | 103 | 54 | 9 | --- | 28 | 132 | 325 | 3,051 |
| 1958 | 1,136 | 1,082 | 665 | 77 | 2,960 | 102 | 66 | 6 | --- | 37 | 133 | 343 | 3,304 |
| 1959 | 1,183 | 1,114 | 680 | 23 | 3,000 | 101 | 74 | 4 | --- | 48 | 147 | 375 | 3,376 |
| 1960 | 1,097 | 1,073 | 793 | 26 | 2,989 | 96 | 64 | 4 | 1 | 36 | 139 | 340 | 3,329 |
| 1961 | 1,353 | 1,036 | 771 | 20 | 3,180 | 88 | 74 | 4 | --- | 43 | 151 | 359 | 3,540 |
| 1962 | 1,222 | 1,069 | 933 | 15 | 3,239 | 90 | 78 | 6 | --- | 48 | 163 | 385 | 3,624 |
| 1963 | 1,391 | 1,126 | 1,146 | 21 | 3,684 | 97 | 84 | 6 | --- | 42 | 146 | 374 | 4,058 |
| 1964 | 1,404 | 1,107 | 1,100 | 32 | 3,643 | 94 | 105 | 5 | --- | 57 | 165 | 426 | 4,069 |
| 1965 | 1,739 | 1,241 | 1,200 | 38 | 4,218 | 100 | 104 | 6 | --- | 53 | 206 | 469 | 4,687 |
| 1966 | 1,691 | 1,273 | 1,353 | 58 | 4,375 | 96 | 97 | 7 | --- | 61 | 201 | 462 | 4,837 |
| 1967 | 1,816 | 1,234 | 1,494 | 44 | 4,588 | 86 | 97 | 7 | --- | 59 | 259 | 508 | 5,096 |
| 1968 | 1,978 | 1,290 | 1,967 | 36 | 5,271 | 87 | 94 | 7 | --- | 61 | 236 | 485 | 5,756 |
| 1969 | 2,255 | 1,415 | 2,150 | 37 | 5,857 | 94 | 79 | 7 | --- | 48 | 243 | 471 | 6,328 |
| 1970 3/ | 2,077 | 1,381 | 2,302 | 34 | 5,794 | 82 | 65 | 6 | --- | 52 | 267 | 472 | 6,267 |
| 1971 |  |  |  |  |  |  |  |  |  |  |  |  |  |

---

1/ Adjusted for exports of refined and further processed salad oil. Prior to January 1965 no adjustment made for exports of undeodorized hydrogenated oil. 2/ Includes soap, fatty acids and other miscellaneous. 3/ Preliminary.

Table 10.--Cottonseed and soybean oil: U.S. exports for dollars and under P.L. 480, by country of destination, and total value, 1967-70 1/

| Country of destination | Year beginning October | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1967 | | | 1968 | | | 1969 | | | 1970 | | |
| | Public Law 480 | Commercial 2/ | Total | Public Law 480 | Commercial 2/ | Total | Public Law 480 | Commercial 2/ | Total | Public Law 480 | Commercial 2/ | Total |
| | -- Million pounds -- | | | | | | | | | | | |
| North America | | | | | | | | | | | | |
| Canada | 3/ | 33 | 33 | 3/ | 45 | 45 | --- | 79 | 79 | --- | 77 | 77 |
| Dominican Republic | 48 | 2 | 50 | 12 | 16 | 28 | 16 | 17 | 33 | 23 | 1 | 24 |
| Haiti | 2 | 15 | 17 | 1 | 18 | 19 | 1 | 18 | 19 | 3 | 23 | 26 |
| Mexico | --- | 11 | 11 | --- | 4 | 4 | 3/ | 52 | 52 | --- | 8 | 8 |
| Other | 9 | 20 | 28 | 1 | 19 | 20 | 5 | 34 | 39 | 3 | 46 | 49 |
| Total | 59 | 79 | 138 | 14 | 102 | 116 | 22 | 200 | 222 | 29 | 155 | 184 |
| South America | | | | | | | | | | | | |
| Argentina | --- | --- | --- | --- | 2 | 2 | --- | --- | --- | --- | 3/ | 3/ |
| Brazil | 21 | --- | 21 | 9 | --- | 9 | 10 | 3/ | 10 | 6 | --- | 6 |
| Chile | 33 | --- | 33 | 20 | 11 | 31 | 2 | 36 | 38 | 4 | 54 | 58 |
| Colombia | 8 | 1 | 9 | 8 | --- | 8 | 115 | 2 | 17 | 10 | 7 | 17 |
| Ecuador | 1 | 5 | 6 | 2 | 7 | 9 | 4 | 8 | 12 | 5 | 18 | 23 |
| Peru | 5 | --- | 5 | 4 | 5 | 9 | 6 | 53 | 59 | 4 | 107 | 111 |
| Venezuela | 3 | 34 | 37 | 1 | 72 | 73 | --- | 44 | 44 | --- | 63 | 63 |
| Other | 1 | 1 | 2 | 1 | 1 | 2 | 2 | 1 | 3 | 3 | 1 | 4 |
| Total | 72 | 41 | 113 | 45 | 97 | 142 | 39 | 144 | 183 | 32 | 250 | 282 |
| Western Europe | | | | | | | | | | | | |
| Spain | 1 | --- | 1 | --- | --- | --- | --- | 3/ | 3/ | --- | 3/ | 3/ |
| Sweden | --- | 3/ | 3/ | --- | 7 | 7 | --- | 13 | 13 | --- | 23 | 23 |
| Germany, West | --- | 1 | 1 | --- | 15 | 15 | 3/ | 38 | 38 | --- | 57 | 57 |
| Netherlands | --- | 1 | 1 | --- | 11 | 11 | 3/ | 35 | 35 | --- | 22 | 22 |
| Greece | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 12 | 12 |
| Italy | --- | 3/ | 3/ | --- | 3/ | 3/ | --- | 3/ | 3/ | --- | 3/ | 2/ |
| Belgium-Luxembourg | --- | 3/ | 3/ | --- | 3/ | 3/ | 3/ | 6 | 6 | --- | 1 | 1 |
| United Kingdom | --- | 3/ | 3/ | 1 | --- | 1 | 3/ | 83 | 83 | --- | 46 | 46 |
| Other | 4 | --- | 4 | 1 | --- | 1 | 1 | 9 | 10 | --- | 9 | 9 |
| Total | 5 | 1 | 7 | 2 | 34 | 36 | 1 | 184 | 185 | --- | 170 | 170 |
| Eastern Europe | | | | | | | | | | | | |
| Poland | 16 | --- | 16 | 4 | --- | 4 | 6 | 27 | 33 | --- | 39 | 39 |
| Yugoslavia | --- | --- | --- | 3/ | --- | 3/ | 1 | 2 | 3 | --- | 271 | 271 |
| Other | --- | --- | --- | --- | --- | --- | 1 | --- | 1 | --- | --- | --- |
| Total | 16 | --- | 16 | 4 | --- | 4 | 8 | 29 | 37 | --- | 310 | 310 |
| Africa | | | | | | | | | | | | |
| Algeria | --- | --- | --- | 3 | --- | 3 | 1 | --- | 1 | --- | --- | --- |
| Egypt | --- | --- | --- | --- | 17 | 17 | --- | 100 | 100 | 2 | 78 | 80 |
| Guinea | 5 | --- | 5 | 6 | --- | 6 | 3/ | 3/ | 3/ | 10 | --- | 10 |
| Morocco | 33 | 22 | 55 | 28 | --- | 28 | 20 | 45 | 65 | 60 | 35 | 95 |
| Tunisia | 92 | 5 | 97 | 54 | 3 | 57 | 72 | 23 | 95 | 68 | 8 | 76 |
| Other | 7 | --- | 8 | 13 | --- | 13 | 15 | 21 | 36 | 17 | 21 | 38 |
| Total | 137 | 27 | 164 | 104 | 20 | 124 | 108 | 189 | 297 | 157 | 142 | 299 |
| Asia and Oceania | | | | | | | | | | | | |
| Australia | --- | 8 | 8 | --- | 2 | 2 | 1 | 7 | 8 | 1 | 11 | 12 |
| Burma | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hong Kong | 1 | 11 | 12 | 1 | 3 | 4 | 1 | 11 | 12 | --- | 2 | 2 |
| India | 196 | --- | 196 | 328 | --- | 328 | 188 | 62 | 250 | 284 | --- | 284 |
| Iran | 7 | --- | 7 | 30 | --- | 30 | 64 | 134 | 198 | 8 | 128 | 136 |
| Israel | 49 | --- | 49 | 34 | --- | 34 | 38 | --- | 38 | 41 | --- | 41 |
| Japan | --- | 2 | 2 | --- | 2 | 2 | 3/ | 17 | 17 | --- | 1 | 1 |
| Pakistan | 224 | --- | 224 | 130 | 1 | 131 | 284 | 89 | 373 | 170 | 108 | 278 |
| South Viet Nam | 37 | --- | 37 | 41 | --- | 41 | 4 | 3 | 7 | 29 | --- | 29 |
| Taiwan | 1 | 4 | 5 | --- | --- | --- | --- | 9 | 9 | --- | 18 | 18 |
| Turkey | 3 | --- | 3 | 3/ | --- | 3/ | 6 | --- | 6 | --- | 31 | 31 |
| Other | 27 | 4 | 32 | 9 | 5 | 14 | 15 | 16 | 31 | 20 | 16 | 36 |
| Total | 545 | 28 | 574 | 573 | 13 | 586 | 601 | 348 | 949 | 553 | 315 | 868 |
| Grand Total | 834 | 177 | 1,012 | 743 | 266 | 1,009 | 779 | 1,093 | 1,872 | 771 | 1,343 | 2,114 |
| Value of Exports | | | | | | | | | | | | |
| Total (Mil. dol.) | | | 116 | | | 101 | | | 216 | | | 309 |
| Per pound (Cent) | | | 11.5 | | | 10.0 | | | 11.6 | | | 14.6 |

---

1/ Census data. Breakdown between P.L. 480 and commercial provided by the Fats and Oils Division, FAS. 2/ Includes Barter, CCC credits. 3/ Less than 500,000 pounds.

Table 11.--Soybean and cottonseed oils: U.S. exports for dollars and under Public Law 480 programs, 1949-70

| Year beginning October | Soybean oil | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Dollars | | | | PL 480 | | | Grand total | % PL 480 |
| | Barter | CCC credit | Other 1/ | Total | Title I 2/ | Title II 3/ | Total | | |
| | Million pounds | Million pounds | Million pounds | Million pounds | Million pounds | Million pounds | Million pounds | Million pounds | Percent |
| 1949 | --- | --- | 291 | 291 | --- | --- | --- | 291 | --- |
| 1950 | --- | --- | 490 | 490 | --- | --- | --- | 490 | --- |
| 1951 | --- | --- | 271 | 271 | --- | --- | --- | 271 | --- |
| 1952 | --- | --- | 93 | 93 | --- | --- | --- | 93 | --- |
| 1953 | --- | --- | 71 | 71 | --- | --- | --- | 71 | --- |
| 1954 | 3 | --- | 47 | 50 | --- | --- | --- | 50 | --- |
| 1955 | --- | --- | 274 | 274 | 282 | --- | 282 | 556 | 51 |
| 1956 | --- | --- | 300 | 300 | 507 | --- | 507 | 807 | 63 |
| 1957 | --- | --- | 202 | 202 | 602 | --- | 602 | 804 | 75 |
| 1958 | --- | --- | 195 | 195 | 735 | --- | 735 | 930 | 79 |
| 1959 | --- | --- | 364 | 364 | 589 | --- | 589 | 953 | 62 |
| 1960 | --- | --- | 283 | 283 | 417 | 21 | 438 | 721 | 61 |
| 1961 | --- | --- | 624 | 624 | 466 | 218 | 684 | 1,308 | 52 |
| 1962 | --- | --- | 513 | 513 | 540 | 112 | 652 | 1,165 | 56 |
| 1963 | 31 | --- | 509 | 540 | 520 | 45 | 565 | 1,106 | 51 |
| 1964 | 131 | --- | 477 | 608 | 539 | 193 | 732 | 1,340 | 55 |
| 1965 | 176 | 21 | 182 | 379 | 324 | 220 | 544 | 923 | 59 |
| 1966 | 132 | 47 | 90 | 269 | 522 | 286 | 808 | 1,077 | 75 |
| 1967 | 67 | 18 | 47 | 132 | 618 | 213 | 831 | 963 | 86 |
| 1968 | 75 | --- | 54 | 129 | 573 | 168 | 741 | 870 | 85 |
| 1969 | 444 | 53 | 145 | 642 | 604 | 174 | 778 | 1,420 | 55 |
| 1970 4/ | 650 | 200 | 131 | 981 | 548 | 213 | 761 | 1,742 | 44 |
| | Cottonseed oil | | | | | | | | |
| 1949 | --- | --- | 145 | 145 | --- | --- | --- | 145 | --- |
| 1950 | --- | --- | 57 | 57 | --- | --- | --- | 57 | --- |
| 1951 | --- | --- | 122 | 122 | --- | --- | --- | 122 | --- |
| 1952 | --- | --- | 50 | 50 | --- | --- | --- | 50 | --- |
| 1953 | --- | --- | 398 | 398 | --- | --- | --- | 398 | --- |
| 1954 | 32 | --- | 508 | 540 | 118 | 22 | 140 | 680 | 21 |
| 1955 | 3 | --- | 306 | 309 | 290 | 6 | 296 | 605 | 49 |
| 1956 | --- | --- | 367 | 367 | 56 | --- | 56 | 423 | 13 |
| 1957 | --- | --- | 154 | 154 | 94 | --- | 94 | 248 | 38 |
| 1958 | --- | --- | 263 | 263 | 141 | --- | 141 | 404 | 35 |
| 1959 | --- | --- | 409 | 409 | 94 | --- | 94 | 503 | 19 |
| 1960 | --- | --- | 287 | 287 | 68 | 14 | 82 | 369 | 22 |
| 1961 | --- | --- | 183 | 183 | 202 | 86 | 288 | 471 | 61 |
| 1962 | --- | --- | 206 | 206 | 132 | 51 | 183 | 389 | 47 |
| 1963 | --- | --- | 328 | 328 | 221 | 35 | 256 | 584 | 44 |
| 1964 | 73 | --- | 367 | 440 | 106 | 93 | 199 | 639 | 31 |
| 1965 | 51 | --- | 154 | 205 | 65 | 2 | 67 | 272 | 25 |
| 1966 | 38 | 4 | 33 | 75 | --- | 1 | 1 | 76 | 1 |
| 1967 | 19 | --- | 28 | 47 | --- | 2 | 2 | 49 | 4 |
| 1968 | 69 | --- | 68 | 137 | --- | 2 | 2 | 139 | 1 |
| 1969 | 43 | 60 | 348 | 451 | --- | 1 | 1 | 452 | 5/ |
| 1970 4/ | N.A. | N.A. | N.A. | 361 | 9 | 1 | 10 | 371 | 3 |
| | Total soybean and cottonseed oils | | | | | | | | |
| 1949 | --- | --- | 436 | 436 | --- | --- | --- | 436 | --- |
| 1950 | --- | --- | 547 | 547 | --- | --- | --- | 547 | --- |
| 1951 | --- | --- | 393 | 393 | --- | --- | --- | 393 | --- |
| 1952 | --- | --- | 143 | 143 | --- | --- | --- | 143 | --- |
| 1953 | --- | --- | 469 | 469 | --- | --- | --- | 469 | --- |
| 1954 | 35 | --- | 555 | 590 | 118 | 22 | 140 | 730 | 19 |
| 1955 | 3 | --- | 580 | 583 | 572 | 6 | 578 | 1,162 | 50 |
| 1956 | --- | --- | 667 | 667 | 563 | --- | 563 | 1,231 | 46 |
| 1957 | --- | --- | 356 | 356 | 696 | --- | 696 | 1,052 | 66 |
| 1958 | --- | --- | 458 | 458 | 876 | --- | 876 | 6/1,345 | 65 |
| 1959 | --- | --- | 773 | 773 | 683 | --- | 683 | 1,456 | 47 |
| 1960 | --- | --- | 570 | 570 | 485 | 35 | 520 | 1,090 | 48 |
| 1961 | --- | --- | 807 | 807 | 668 | 304 | 972 | 1,780 | 55 |
| 1962 | --- | --- | 719 | 719 | 672 | 163 | 835 | 1,554 | 54 |
| 1963 | 31 | --- | 837 | 868 | 741 | 80 | 821 | 1,689 | 49 |
| 1964 | 204 | --- | 844 | 1,048 | 645 | 286 | 931 | 1,979 | 47 |
| 1965 | 227 | 21 | 336 | 584 | 389 | 222 | 611 | 1,195 | 51 |
| 1966 | 170 | 51 | 123 | 344 | 522 | 287 | 809 | 1,153 | 70 |
| 1967 | 86 | 18 | 73 | 177 | 618 | 215 | 834 | 1,012 | 82 |
| 1968 | 144 | --- | 122 | 266 | 573 | 170 | 743 | 1,009 | 74 |
| 1969 | 487 | 113 | 493 | 1,093 | 604 | 175 | 779 | 1,872 | 42 |
| 1970 4/ | N.A. | N.A. | N.A. | 1,343 | 557 | 214 | 771 | 2,114 | 36 |

1/ Includes dollar financing by AID. 2/ Includes all sales programs, i.e., foreign currencies, which permit conversion to dollars and dollar credit sales. 3/ Includes donation programs with voluntary agencies and disaster and other relief by AID. 4/ Preliminary. 5/ Insignificant. 6/ Includes 10 million pounds of soybean oil that was shipped to Poland, Yugoslavia and Turkey that was reported by Census as shortening and mixed vegetable oils. Source: Total exports as reported by Bureau of Census. Breakdown between dollars and P.L. 480 from Fats and Oils Division, FAS.

Table 12.--High-protein feed: Quantity available for feeding and high-protein feed-consuming animal units, 1960-71

| Year beginning October | Quantity available for feeding (in terms of 44% protein soybean meal equivalent) | | | | High-protein consuming animal units | | | Total per animal unit |
|---|---|---|---|---|---|---|---|---|
| | Oilseed meal | Animal protein | Grain protein | Total | Livestock | Poultry | Total | |
| | -- 1,000 tons -- | | | | Million | Million | Million | Pounds |
| 1960 | 11,259 | 3,281 | 947 | 15,487 | 70.0 | 51.8 | 121.8 | 254 |
| 1961 | 11,687 | 3,421 | 1,052 | 16,160 | 71.0 | 51.3 | 122.3 | 264 |
| 1962 | 11,976 | 3,543 | 1,069 | 16,588 | 73.0 | 52.0 | 125.0 | 265 |
| 1963 | 11,656 | 3,753 | 1,136 | 16,545 | 72.4 | 53.4 | 125.8 | 263 |
| 1964 | 11,804 | 3,557 | 1,181 | 16,542 | 69.9 | 55.9 | 125.8 | 263 |
| 1965 | 12,689 | 3,577 | 1,238 | 17,504 | 68.6 | 59.7 | 128.3 | 273 |
| 1966 | 12,561 | 3,950 | 1,250 | 17,761 | 71.0 | 62.0 | 133.0 | 267 |
| 1967 | 12,240 | 4,290 | 1,283 | 17,813 | 71.5 | 60.3 | 131.8 | 270 |
| 1968 | 13,520 | 3,868 | 1,298 | 18,686 | 72.2 | 62.5 | 134.7 | 277 |
| 1969 | 15,309 | 3,487 | 1,320 | 20,116 | 72.2 | 66.2 | 138.4 | 291 |
| 1970 1/ | 15,210 | 3,535 | 1,320 | 20,065 | 74.6 | 67.7 | 142.3 | 282 |
| 1971 2/ | 15,600 | 3,750 | 1,350 | 20,700 | 74.3 | 68.6 | 142.9 | 290 |

1/ Preliminary. 2/ Forecast based on November indications.

Table 13.--Soybean meal: Supply, disposition, meal equivalent of exports of soybeans, and price, 1960-71

| Year beginning October | Supply | | | | Disposition | | | | Soybeans (Meal equivalent of exports) 2/ | Price per ton, Bulk, Decatur | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Domestic disappearance | | | | |
| | Production | Imports | Stocks, October 1 1/ | Total | Exports | Shipments to U.S. Territories | Total | Per high protein animal unit | | 44% protein | 49 or 50% protein |
| | -- 1,000 tons -- | | | | | | | Pounds | 1,000 tons | Dollars | |
| 1960 | 9,452 | --- | 83 | 9,535 | 590 | --- | 8,867 | 146 | 3,090 | 60.60 | 66.50 |
| 1961 | 10,342 | --- | 78 | 10,420 | 1,064 | --- | 9,262 | 151 | 3,639 | 63.60 | 69.40 |
| 1962 | 11,127 | --- | 94 | 11,221 | 1,476 | --- | 9,586 | 153 | 4,282 | 71.30 | 77.10 |
| 1963 | 10,609 | --- | 159 | 10,769 | 1,478 | --- | 9,168 | 146 | 4,539 | 71.00 | 78.70 |
| 1964 | 11,286 | --- | 122 | 11,408 | 2,036 | 23 | 9,243 | 147 | 4,890 | 70.20 | 79.20 |
| 1965 | 12,901 | --- | 106 | 13,007 | 2,604 | 52 | 10,219 | 159 | 5,968 | 81.50 | 89.60 |
| 1966 | 13,483 | --- | 132 | 13,615 | 2,657 | 49 | 10,772 | 162 | 6,327 | 78.80 | 86.30 |
| 1967 | 13,660 | --- | 138 | 13,798 | 2,899 | 60 | 10,693 | 162 | 6,415 | 76.90 | 84.30 |
| 1968 | 14,581 | --- | 145 | 14,726 | 3,044 | 56 | 11,469 | 170 | 6,797 | 74.10 | 82.50 |
| 1969 | 17,596 | --- | 157 | 17,753 | 4,035 | 67 | 13,514 | 195 | 10,669 | 78.40 | 86.60 |
| 1970 3/ | 18,027 | --- | 137 | 18,164 | 4,559 | 61 | 13,398 | 188 | 10,274 | 78.50 | 84.30 |
| 1971 4/ | 17,750 | --- | 145 | 17,895 | 4,100 | 50 | 13,600 | 190 | 9,500 | 5/74.75 | 5/80.75 |

1/ Stocks at processors' plants. 2/ Calculated at 47.5 pounds of meal per bushel. 3/ Preliminary. 4/ Forecast except October 1 stocks. 5/ October average.

Table 14.--Oilseed cake and meal: Supply, disposition, and price, year beginning October, 1970-71

| Item | Supply | | | | Disposition | | | | Price per ton 2/ |
|---|---|---|---|---|---|---|---|---|---|
| | Stocks, October 1 1/ | Production | Imports | Total | Domestic disappearance | Exports | Shipments to U.S. Territories | Total | |
| | -- 1,000 tons -- | | | | | | | | Dollars |
| 1970-71 3/ | | | | | | | | | |
| Soybean | 137 | 18,027 | --- | 18,164 | 13,398 | 4,559 | 61 | 18,018 | 78.50 |
| Cottonseed | 39 | 1,762 | --- | 1,801 | 1,680 | 27 | 12 | 1,719 | 73.40 |
| Linseed | 17 | 354 | 2 | 373 | 258 | 110 | --- | 368 | 62.60 |
| Peanut | 1 | 177 | --- | 178 | 173 | --- | --- | 173 | 77.70 |
| Copra | --- | 99 | --- | 99 | 99 | --- | --- | 99 | 4/67.50 |
| Total | 194 | 20,419 | 2 | 20,615 | 15,608 | 4,696 | 73 | 20,377 | |
| 1971-72 5/ | | | | | | | | | |
| Soybean | 145 | 17,750 | --- | 17,895 | 13,600 | | | | 7/74.75 |
| Cottonseed | 82 | 1,900 | --- | 1,982 | 1,900 | | | | 7/66.80 |
| Linseed | 6/ | 425 | --- | 425 | 300 | | | | 7/63.00 |
| Peanut | 5 | 200 | --- | 205 | 200 | | | | 7/73.00 |
| Copra | --- | 100 | --- | 100 | 100 | | | | --- |
| Total | 232 | 20,375 | --- | 20,607 | 16,100 | | | | |

1/ Stocks at processing mills. 2/ Soybean meal, 44 percent protein, bulk, Decatur. Cottonseed meal, 41 percent protein, bulk, Memphis. Linseed meal, 34 percent protein, bulk, Minneapolis. Copra meal, bulk, San Francisco. Peanut meal, 50 percent protein, Southeast milling points. 3/ Preliminary. 4/ October 1970 average. 5/ Based on November 1971 indications. 6/ Not reported. 7/ October average.

Soybean meal exports as such in 1971/72 probably will drop below last year's record level. Overseas demand continues strong but U.S. supplies are limited. Also, U.S. exports of soybeans probably will fall short of the 1970/71 record movement. Thus, total exports of soybean meal (including the meal equivalent of soybeans) will decline significantly.

During the 1970/71 marketing year soybean meal exports totaled 4.6 million tons, well above the previous year's record of 4.0 million. The total was likely boosted by a signifcant tonnage shipped during late summer in anticipation of the dock strike. Some of this meal was for consumption in the 1971/72 marketing year. Since 1960, exports have increased rapidly—rising from 0.6 million tons. And exports have gained as a share of total U.S. meal production, from a mere 6% to 25% last season.

Soybean meal shipped to Western Europe, our major market, reached 3.3 million tons in 1970/71 or about three-fourths of the total U.S. shipment.

Prices of soybean meal at Decatur (44% protein) averaged $78.50 during 1970/71, about the same as the year before. Prices during most of the year were more stable than usual. The monthly average varied between $74 and $84 per ton. Prices this season probably will average slightly higher—around the $80 per ton level. Prices during October averaged $75, about $2 less than October 1970, partly reflecting the slowdown in export movement due to the dock strike. Seasonal price increases are likely during the winter as domestic feed requirements and exports pick up, barring a lengthy dock strike.

## COTTONSEED

### Crush to Increase

Cottonseed crushings this season probably will total about 4.1 million tons, up 0.3 million from 1970/71. This would produce around 1,350 million pounds of crude cottonseed oil (1,210 million last year) and 1.9 million tons of cottonseed meal (1,729 million last year).

During August-October, farm prices for cottonseed were strong, averaging $58 per ton, about $6 above this same period a year ago. This reflects the good demand for cottonseed products and also the rather tight supply situation for edible fats and oils in general. Last marketing year cottonseed averaged about $57 per ton, $20 above the support price and the highest since 1966/67. There is no price support program for cottonseed this marketing year. Less U.S. cottonseed may move to Mexico this year because of larger oil production there.

### Oil Supplies Are Larger

Cottonseed oil supplies in 1971/72 are estimated at 1.5 billion pounds, about 7% above the previous year.

Domestic use likely will total around 1 billion pounds, or near the level of the past few years. Usage last year dropped to the lowest level of record at about 0.9 billion pounds. The decline was due primarily to a shrinking supply, resulting in less use in shortening and in cooking and salad oils, the 2 major outlets for cottonseed oil. High prices apparently caused shortening manufacturers to switch to other raw materials, particularly lard, which was more abundant and cheaper.

Cottonseed oil exports are expected to increase a little from the 359 million pounds of last season, possibly totaling near 400 million pounds. So far this season, about 41 million pounds have been exported, compared with 27 million last season.

Cottonseed oil prices (crude, Valley) during August-October averaged around 15½ cents per pound, about 2¼ cents above the comparable period a year ago. However, they have declined since the start of the new season, and in mid-November were under 14 cents.

Cottonseed meal supplies total 2 million tons, nearly a tenth above 1970/71. Domestic use also may rise to around 1.9 million tons compared wtih 1.7 million tons in 1970/71. Larger supplies and cheaper feed grain prices will encourage increased cattle feeding, resulting in greater use of cottonseed meal. Prices (41% protein, expeller, Memphis) during August-October averaged $74 per ton, about $4 below this period a year ago.

## LARD

### Output And Use Will Be Down

Lard production for the marketing year started October 1 is estimated at 1.9 billion pounds, about 7% below 1970/71. Reduced hog slaughter and a continuing decline in lard yield per hog are in prospect.

Domestic use this year may fall 8% to around 1.5 billion pounds. Usage probably will be down in all major categories—shortening, margarine, and direct use of lard. Last season, use increased sharply in the first 2 categories and moderately in the last. The larger supplies and competitive prices last year were major factors which helped boost domestic consumption.

Volume going abroad may total only 0.3 billion pounds, down from the 0.4 billion pounds of 1970/71. The United Kingdom is our major export market, accounting for about two-thirds. Since January 1969, exports have moved to the U.K. under the lard export payment program, which was instituted to keep U.S. lard competitive with that shipped from the European Community. During 1970/71, about 255 million pounds were shipped to the U.K. at a payment rate of 1 cent per pound.

Lard prices during 1971/72 will remain strong, reflecting smaller lard supplies and good demand for edible fats and oils. For the entire year they likely will average near last season's 11 cents per pound (tanks, loose, Chicago). Recently, prices have declined a little, probably due mainly to seasonal increases in lard output.

Table 15.--Food fats and oils: Supply, disposition, and per capita disappearance, 1962-71

| Item | Year beginning October | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 1/ | Forecast 1971 2/ |
| | -- Million pounds -- | | | | | | | | | |
| Stocks, October 1 | | | | | | | | | | |
| Butter | 3/419 | 3/450 | 3/188 | 161 | 68 | 212 | 197 | 155 | 171 | 222 |
| Lard | 73 | 81 | 68 | 62 | 64 | 107 | 94 | 56 | 60 | 77 |
| Tallow, edible | 21 | 34 | 25 | 22 | 40 | 70 | 39 | 26 | 37 | 63 |
| Corn oil | 50 | 63 | 62 | 35 | 55 | 47 | 41 | 71 | 60 | 57 |
| Cottonseed oil | 296 | 488 | 433 | 236 | 202 | 207 | 99 | 377 | 121 | 92 |
| Soybean oil | 618 | 920 | 578 | 297 | 462 | 596 | 540 | 415 | 543 | 755 |
| Palm oil | 16 | 4/37 | 4/22 | 10 | 17 | 13 | 28 | 28 | 20 | 35 |
| Peanut oil | 11 | 30 | 8 | 18 | 34 | 31 | 14 | 17 | 12 | 24 |
| Safflower oil | 46 | 80 | 24 | 35 | 50 | 60 | 76 | 61 | 29 | 30 |
| Sub-total | 1,550 | 2,183 | 1,407 | 876 | 992 | 1,343 | 1,128 | 1,206 | 1,054 | 1,356 |
| Finished products 5/ | 473 | 347 | 232 | 197 | 224 | 256 | 231 | 217 | 236 | 230 |
| Total food fats and oils | 2,023 | 2,530 | 1,640 | 1,073 | 1,216 | 1,599 | 1,359 | 1,423 | 1,290 | 1,586 |
| Imports | | | | | | | | | | |
| Butter | 2 | 2 | 1 | 4 | 2 | 2 | 2 | 2 | 2 | 2 |
| Tallow, edible | 6/ | 1 | 1 | 1 | 1 | 2 | 6/ | 6/ | 6/ | 6/ |
| Olive oil | 37 | 66 | 47 | 47 | 55 | 60 | 58 | 63 | 57 | 65 |
| Corn oil | 15 | 3 | --- | 10 | 2 | 9 | 8 | 3 | 1 | 3 |
| Cottonseed oil | --- | --- | --- | --- | 17 | 13 | 6/ | 6/ | 6/ | --- |
| Palm oil | 27 | 8 | 5 | 41 | 89 | 72 | 161 | 122 | 207 | 250 |
| Peanut oil | 1 | --- | --- | 6/ | --- | 6/ | 6/ | 6/ | 6/ | --- |
| Sesame oil | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 2 | 2 | 2 |
| Total | 83 | 81 | 55 | 104 | 167 | 159 | 231 | 191 | 279 | 322 |
| Production | | | | | | | | | | |
| Butter | 1,491 | 1,454 | 1,412 | 1,120 | 1,235 | 1,185 | 1,139 | 1,127 | 1,151 | 1,150 |
| Lard | 2,495 | 2,475 | 2,205 | 1,900 | 2,066 | 2,067 | 1,969 | 1,833 | 2,048 | 1,900 |
| Tallow, edible | 475 | 572 | 528 | 551 | 597 | 540 | 520 | 566 | 551 | 565 |
| Oleo oil & stearine 7/ | 4 | 6 | 7 | 12 | 14 | 6 | 6 | 11 | 4 | 5 |
| Corn oil | 379 | 413 | 435 | 449 | 446 | 442 | 467 | 474 | 486 | 500 |
| Cottonseed oil | 1,927 | 1,936 | 1,999 | 1,830 | 1,223 | 1,020 | 1,450 | 1,251 | 1,235 | 1,350 |
| Soybean oil | 5,091 | 4,822 | 5,146 | 5,800 | 6,076 | 6,032 | 6,531 | 7,904 | 8,251 | 8,100 |
| Peanut oil | 91 | 114 | 144 | 163 | 175 | 198 | 199 | 180 | 265 | 250 |
| Safflower oil (estimate) | 152 | 104 | 111 | 138 | 170 | 139 | 100 | 100 | 120 | 140 |
| Sub-total | 12,106 | 11,896 | 11,987 | 11,963 | 12,001 | 11,629 | 12,381 | 13,446 | 14,122 | 13,960 |
| Oilseeds (oil equivalent of exports) | 1,989 | 2,115 | 2,361 | 2,940 | 3,050 | 3,078 | 3,210 | 5,007 | 4,850 | 4,505 |
| Total Supply | 16,201 | 16,622 | 16,043 | 16,080 | 16,435 | 16,465 | 17,181 | 20,067 | 20,541 | 20,373 |
| Exports and Shipments | | | | | | | | | | |
| Butter | 8/131 | 8/319 | 150 | 24 | 7 | 31 | 37 | 8 | 27 | 150 |
| Lard | 571 | 706 | 431 | 218 | 247 | 246 | 282 | 405 | 382 | 350 |
| Tallow, edible | 5 | 4 | 5 | 3 | 5 | 6 | 8 | 11 | 6 | 10 |
| Oleo oil & stearine | 4 | 6 | 7 | 12 | 14 | 6 | 6 | 11 | 4 | 5 |
| Corn oil | --- | --- | --- | --- | 18 | 25 | 29 | 34 | 43 | 40 |
| Cottonseed oil | 8/389 | 8/584 | 641 | 275 | 78 | 51 | 141 | 453 | 373 | 400 |
| Soybean oil | 8/1,165 | 8/1,106 | 1,357 | 948 | 1,105 | 993 | 899 | 1,449 | 1,782 | 1,550 |
| Peanut oil | 4 | 67 | 75 | 14 | 6 | 4 | 28 | 34 | 60 | 50 |
| Processed food oils 9/ | 94 | 111 | 79 | 64 | 76 | 59 | 61 | 63 | 67 | 65 |
| Sub-total | 2,362 | 2,903 | 2,744 | 1,558 | 1,557 | 1,427 | 1,490 | *2,493 | *2,744 | *2,660 |
| Oilseeds (oil equivalent) | | | | | | | | | | |
| Cottonseed | 3 | 3 | 3 | 3 | 2 | 1 | 1 | 9 | 12 | 5 |
| Soybeans | 1,984 | 2,103 | 2,265 | 2,764 | 2,930 | 2,972 | 3,148 | 4,941 | 4,757 | 4,400 |
| Peanuts (for crushing abroad) | 2 | 9 | 29 | 43 | 47 | 28 | 9 | 12 | 58 | 50 |
| Safflower | --- | --- | 64 | 130 | 71 | 77 | 52 | 45 | 23 | 50 |
| Sub-total | 1,989 | 2,115 | 2,361 | 2,940 | 3,050 | 3,078 | 3,210 | 5,007 | 4,850 | 4,505 |
| Total exports | 4,351 | 5,018 | 5,104 | 4,498 | 4,608 | 4,505 | 4,700 | 7,500 | 7,613 | 7,165 |
| Domestic disappearance | | | | | | | | | | |
| Butter | 1,332 | 1,399 | 1,291 | 1,193 | 1,088 | 1,172 | 1,146 | 1,106 | 1,075 | 1,050 |
| Lard | 1,904 | 1,786 | 1,780 | 1,676 | 1,781 | 1,834 | 1,726 | 1,425 | 1,649 | 1,550 |
| Tallow, edible | 457 | 578 | 527 | 530 | 563 | 567 | 526 | 544 | 519 | 575 |
| Corn oil | 381 | 416 | 462 | 439 | 438 | 432 | 416 | 454 | 447 | 460 |
| Cottonseed oil | 1,347 | 1,407 | 1,555 | 1,590 | 1,157 | 1,090 | 1,031 | 1,052 | 892 | 950 |
| Soybean oil | 3,624 | 4,058 | 4,069 | 4,687 | 4,837 | 5,096 | 5,756 | 6,328 | 6,267 | 6,500 |
| Olive oil | 37 | 66 | 47 | 47 | 55 | 60 | 58 | 63 | 67 | 65 |
| Palm oil | 43 | 23 | 17 | 34 | 93 | 57 | 161 | 130 | 191 | 250 |
| Peanut oil | 69 | 69 | 59 | 133 | 172 | 211 | 168 | 151 | 193 | 200 |
| Safflower oil (estimate) | 119 | 160 | 100 | 123 | 159 | 124 | 115 | 107 | 100 | 100 |
| Sesame oil | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 2 | 2 | 2 |
| Processed food oils 9/ | -94 | -111 | -79 | -64 | -76 | -59 | -61 | -63 | -67 | -65 |
| Total | 9,220 | 9,852 | 9,829 | 10,390 | 10,268 | 10,585 | 11,044 | 11,298 | 11,335 | 11,637 |
| Total (calculated net) 10/ | 9,346 | 9,967 | 9,864 | 10,363 | 10,236 | 10,610 | 11,058 | 11,277 | 11,342 | |
| Total use for food 11/ | 8,845 | 9,605 | 9,298 | 10,044 | 10,030 | 10,316 | 10,590 | 10,988 | 11,027 | 11,300 |
| | -- Pounds -- | | | | | | | | | |
| Per capita disappearance | | | | | | | | | | |
| Butter (fat content) | 5.7 | 5.9 | 5.4 | 4.9 | 4.4 | 4.7 | 4.6 | 4.4 | 4.2 | |
| Margarine (fat content) | 7.8 | 7.6 | 7.9 | 8.3 | 8.6 | 8.5 | 8.5 | 8.7 | 8.7 | |
| Lard (direct use) | 6.5 | 6.4 | 6.2 | 5.7 | 5.4 | 5.4 | 5.2 | 4.5 | 4.6 | |
| Baking and frying fats | 13.6 | 14.0 | 13.7 | 16.0 | 15.7 | 16.1 | 16.7 | 17.6 | 17.0 | |
| Salad and cooking oils | 10.6 | 12.0 | 12.3 | 13.0 | 12.8 | 13.2 | 14.0 | 15.0 | 15.5 | |
| Other edible uses | 1.3 | 2.9 | 1.4 | 2.2 | 2.5 | 2.4 | 2.3 | 2.6 | 2.3 | |
| Total (fat content) | 45.5 | 48.8 | 46.7 | 50.1 | 49.5 | 50.4 | 51.3 | 52.8 | 52.4 | 53 |

---

1/ Preliminary. 2/ Forecast except October 1 stocks. 3/ Includes estimates of butter oil, ghee, and canned butter. 4/ Includes stocks held by GSA. 5/ Shortening, margarine (fat content), and salad and cooking oils. 6/ Less than 500,000 pounds. 7/ Represents exports only; production data are not available. 8/ Includes estimates of foreign donations of fats and oils, not reported by Census. 9/ Includes exports of processed food oils not classified by kind, shortening and other secondary fats. 10/ Adjusted to reflect changes in stocks of finished products. 11/ Excludes food fats and oils used for non-food purposes, but includes non-food oils (coconut and palm kernel) used in food. *Includes safflower oil not shown separately above.

Table 16.--Total commercial hog slaughter,lard and pork production, and average weights and yields, 1956-70

| Year beginning October | Hogs slaughtered 1/ | Average live weight per hog slaughtered | Total production |  | Average yield per 100 pounds of live weight hog |  | Average yield per hog |  |
|---|---|---|---|---|---|---|---|---|
|  |  |  | Lard rendered 2/ | Pork, excluding lard 3/ | Lard | Pork | Lard | Pork |
|  | Thousand | Pounds | Million pounds | Million pounds | Pounds | Pounds | Pounds | Pounds |
| 1956 | 74,234 | 233 | 2,426 | 9,769 | 14.0 | 56.5 | 32.7 | 131.6 |
| 1957 | 71,183 | 234 | 2,246 | 9,561 | 13.5 | 57.4 | 31.6 | 134.3 |
| 1958 | 78,150 | 237 | 2,514 | 10,657 | 13.6 | 57.5 | 32.2 | 136.4 |
| 1959 | 82,561 | 236 | 2,556 | 11,278 | 13.1 | 57.9 | 31.0 | 136.6 |
| 1960 | 75,995 | 238 | 2,345 | 10,551 | 13.0 | 58.3 | 30.9 | 138.8 |
| 1961 | 78,659 | 239 | 2,350 | 11,069 | 12.5 | 58.9 | 29.9 | 140.7 |
| 1962 | 82,424 | 238 | 2,389 | 11,685 | 12.2 | 59.6 | 29.0 | 141.8 |
| 1963 | 83,011 | 240 | 2,384 | 11,970 | 12.0 | 60.1 | 28.7 | 144.2 |
| 1964 | 78,354 | 238 | 2,130 | 11,382 | 11.3 | 61.0 | 27.2 | 145.3 |
| 1965 | 71,040 | 242 | 1,854 | 10,619 | 10.8 | 61.8 | 26.1 | 149.5 |
| 1966 | 81,205 | 241 | 2,034 | 12,211 | 10.4 | 62.4 | 25.0 | 150.4 |
| 1967 | 84,195 | 240 | 2,036 | 12,712 | 10.1 | 62.9 | 24.2 | 151.0 |
| 1968 | 85,792 | 238 | 1,941 | 13,039 | 9.5 | 63.9 | 22.6 | 152.0 |
| 1969 | 81,863 | 241 | 1,810 | 12,643 | 9.2 | 64.1 | 22.1 | 154.4 |
| 1970 4/ | 95,489 | 239 | 2,028 | 14,696 | 8.9 | 64.4 | 21.2 | 153.9 |

1/ Represents slaughter in federally-inspected establishments plus non-inspected slaughter in retail and wholesale establishments. Does not include farm slaughter. 2/ Includes rendered pork fat. 3/ Excludes lard and rendered pork fat. 4/ Preliminary.

Table 17.--Lard: Supply, disposition, and price, 1956-71

| Year beginning October | Supply |  |  |  |  |  | Disposition |  |  |  | Price per pound, loose, Chicago |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  | Production |  |  |  | Stocks October 1 | Total | Exports and shipments |  |  | Domestic disappearance 1/ |  |
|  | Federally inspected | Other commercial | Farm | Total |  |  | Exports | Shipments | Total |  |  |
|  | Million pounds | Million pounds | Million pounds | Million pounds | Million pounds | Million pounds | Million pounds | Million pounds | Million pounds | Million pounds | Cents |
| 1956 | 2,136 | 290 | 188 | 2,614 | 123 | 2,737 | 530 | 60 | 590 | 2,039 | 12.7 |
| 1957 | 1,973 | 273 | 177 | 2,423 | 69 | 2,492 | 394 | 65 | 461 | 1,994 | 11.6 |
| 1958 | 2,223 | 291 | 165 | 2,679 | 46 | 2,725 | 536 | 73 | 608 | 2,024 | 8.7 |
| 1959 | 2,253 | 303 | 170 | 2,726 | 93 | 2,819 | 655 | 62 | 716 | 2,003 | 8.2 |
| 1960 | 2,076 | 269 | 136 | 2,481 | 92 | 2,573 | 446 | 66 | 513 | 1,969 | 9.9 |
| 1961 | 2,087 | 263 | 118 | 2,468 | 100 | 2,568 | 446 | 62 | 508 | 1,982 | 8.6 |
| 1962 | 2,130 | 259 | 106 | 2,495 | 73 | 2,568 | 508 | 63 | 571 | 1,904 | 8.2 |
| 1963 | 2,143 | 241 | 91 | 2,475 | 81 | 2,556 | 637 | 69 | 706 | 1,786 | 9.2 |
| 1964 | 1,915 | 215 | 75 | 2,205 | 68 | 2,273 | 366 | 65 | 431 | 1,780 | 11.5 |
| 1965 | 1,655 | 199 | 46 | 1,900 | 62 | 1,962 | 156 | 62 | 218 | 1,676 | 11.7 |
| 1966 | 1,825 | 209 | 32 | 2,066 | 64 | 2,130 | 184 | 63 | 247 | 1,781 | 8.7 |
| 1967 | 1,851 | 185 | 31 | 2,067 | 107 | 2,174 | 183 | 63 | 246 | 1,834 | 6.2 |
| 1968 | 1,807 | 135 | 28 | 1,969 | 94 | 2,063 | 223 | 58 | 281 | 1,726 | 8.4 |
| 1969 | 1,701 | 109 | 23 | 1,833 | 56 | 1,889 | 349 | 55 | 405 | 1,425 | 11.6 |
| 1970 2/ | 1,919 | 109 | 20 | 2,048 | 60 | 2,108 | 329 | 53 | 382 | 1,649 | 11.1 |
| 1971 3/ |  |  |  | 1,900 | 77 | 1,977 |  |  | 350 | 1,550 | 4/10.8 |

1/ Adjusted for estimated changes in stocks on farm. 2/ Preliminary. 3/ Forecast except stocks October 1. 4/ October average.

Table 18.--Lard: Utilization, year beginning October, 1956-70

| Year beginning October | Food uses |  |  |  | Non-food uses |  |  | Domestic disappearance |  |  |
|---|---|---|---|---|---|---|---|---|---|---|
|  |  |  |  |  |  |  |  |  | Per capita |  |
|  | Shortening | Margarine | Direct use | Total | Soap | Other industrial | Total | Total | Direct use | Total |
|  | Million pounds | Million pounds | Million pounds | Million pounds | Million pounds | Million pounds | Million pounds | Million pounds | Pounds | Pounds |
| 1956 | 425 | 27 | 1,584 | 2,036 | 1 | 2 | 3 | 2,039 | 9.3 | 12.0 |
| 1957 | 345 | 19 | 1,630 | 1,993 | 1/ | 1 | 1 | 1,994 | 9.4 | 11.5 |
| 1958 | 425 | 26 | 1,564 | 2,015 | --- | 10 | 10 | 2,024 | 8.9 | 11.5 |
| 1959 | 511 | 60 | 1,421 | 1,992 | --- | 11 | 11 | 2,003 | 7.9 | 11.1 |
| 1960 | 497 | 58 | 1,399 | 1,954 | --- | 15 | 15 | 1,969 | 7.6 | 10.8 |
| 1961 | 562 | 80 | 1,324 | 1,966 | --- | 16 | 16 | 1,982 | 7.1 | 10.7 |
| 1962 | 588 | 76 | 1,225 | 1,889 | --- | 15 | 15 | 1,904 | 6.5 | 10.1 |
| 1963 | 470 | 68 | 1,231 | 1,769 | --- | 18 | 18 | 1,786 | 6.4 | 9.3 |
| 1964 | 473 | 94 | 1,200 | 1,767 | --- | 13 | 13 | 1,780 | 6.2 | 9.2 |
| 1965 | 477 | 67 | 1,115 | 1,659 | --- | 17 | 17 | 1,676 | 5.7 | 8.5 |
| 1966 | 552 | 122 | 1,080 | 1,754 | --- | 28 | 28 | 1,781 | 5.4 | 9.0 |
| 1967 | 584 | 142 | 1,085 | 1,811 | --- | 23 | 23 | 1,834 | 5.4 | 9.1 |
| 1968 | 537 | 119 | 1,045 | 1,701 | --- | 25 | 25 | 1,726 | 5.2 | 8.5 |
| 1969 | 416 | 60 | 927 | 1,403 | --- | 22 | 22 | 1,425 | 4.6 | 7.0 |
| 1970 2/ | 509 | 154 | 952 | 1,615 | --- | 33 | 33 | 1,649 | 4.5 | 8.0 |

1/ Less than 500,000 pounds. 2/ Preliminary.

## PEANUTS

### Larger Supplies

Peanut supplies (farmers' stock basis) this year are estimated at a record 3.4 billion pounds, 3% above 1970/71. Prices this fall are holding close to the support level and likely will average near it for the season. The 1971 price support is $268.50 per ton (13.42 cents per pound), $13.50 above the previous year. Support by type is as follows: Virginia, $279; Runner, $261; Southeast Spanish, $268; Southwest Spanish, $264; and Valencia (suitable for cleaning and roasting), $279.

### Edible Use Slackens

During the 1960's, edible use of peanuts increased markedly from around 1.2 billion pounds to 1.6 billion (farmers' stock basis)—an increase of about one-third or near 3% per year. However, use last season was not much changed from the 1½ billion pounds of 1969/70. Although use in roasted peanuts and peanut candy increased, use in peanut butter and salted peanuts remained about the same. Higher peanut prices and efforts by consumers to economize on their food expenditures probably were factors in the levelling of peanut consumption. Food use for the current marketing year may hold about steady, although it lagged slightly below the 1970/71 rate in August-September.

CCC probably will divert about a third of the 1971 peanut crop into crushings and export channels. Crushings are expected to be near last season's 0.8 billion pounds (farmers' stock basis). This would be just about triple the volume of the early 1960's. Crushings vary from year to year, depending upon production, CCC diversion, and other factors. In the past 20 years, they have ranged from a low of about 0.1 billion pounds to last season's record level.

Exports in 1971/72 may be near the record 0.3 billion pounds of last year. They have expanded sharply in recent years, increasing from below 0.1 billion pounds in the early 1960's to last season's record. Canada takes most of these peanuts, although Japan has recently increased purchases. Short 1970 crops in major exporting countries have resulted in sharply higher prices and made U.S. peanuts more competitive.

## FLAXSEED

### Supplies Heavy

Flaxseed supplies this year are estimated at 47 million bushels, around a tenth below last season. The decline is due to smaller production, as carryin stocks last July 1 were larger.

Because of the still heavy supplies, a large part of the crop is going under CCC loan. Through October, farmers had placed 5 million bushels or about a fourth of the crop under support. Prices to farmers this season are averaging about $2.30 per bushel, about 10 cents below a year ago and well below the support price of $2.50 per bushel (grade No. 1).

Flaxseed crushings this season are expected to be about 21 million bushels. During July-September, they totaled nearly 5 million bushels, a little above this period last year. Flaxseed crushings last season were boosted by the CCC flaxseed-linseed oil exchange program. After a lapse of several months, CCC is again contracting to process CCC-owned flaxseed into linseed oil permitting the meal to move to market.

Flaxseed exports may total only 1 million bushels, down from the 3 million of last season, also a small volume. So far this marketing year, exports have been at a standstill.

Based on estimated usage, flaxseed carryover next July 1 will be around 23 million bushels. This is equal to about 1½ year's domestic requirements.

## LINSEED OIL

### Stocks Continue to Build

Linseed oil production this year may be about 40 million pounds more than the 382 million pounds of last season. Total supplies will be close to 625 million pounds, up about 22% as a result of the large carryover and CCC toll crush program.

Domestic disappearance may total around 260 million pounds—near the level of the past several years. The larger supplies and lower prices may have little impact on use.

Linseed oil exports will trail last season's 53 million pounds. During July-September, they were 14 million pounds. However, with competitive world supplies of flaxseed and linseed oil large, prospects for U.S. linseed oil exports are not good.

As a result, linseed oil carryover next July 1 will increase again, and may total around 350 million pounds. This size carryover would equal almost 1¼ year's domestic requirements.

Linseed oil prices (raw, tank cars, Minneapolis) this marketing year are holding steady at a little below 9 cents per pound, compared with about 10½ cents a year ago. Prices will continue relatively low through most of the season, as stocks are large and total use probably will be down. Linseed is now one of the cheapest oils in the U.S. fats and oils complex.

405125

# U.S. TALLOW AND GREASE PRODUCTION AND MARKETING TRENDS

## by GEORGE W. KROMER

*ABSTRACT: Spectacular growth has characterized the U.S. rendering industry over the last 20 years. Production of inedible tallow and greases more than doubled as raw materials increased—reflecting the uptrend in livestock slaughter and meat output. Marketing the increased tallow output has been a challenge; domestic outlets have not absorbed the additional supplies. Exports now account for one-half of domestic production. With U.S. tallow output projected to expand a third by 1980, finding new outlets will continue to be a problem.*

*KEY WORDS: Tallow and grease, rendering industry economic growth.*

Rendering, the inedible tallow and grease sector of the U.S. fats and oils economy, has experienced dynamic growth over the past 2 decades. These animal fats are a major source of nonfood fats and oils. And the volume of output ranks second only to soybean oil (the major food oil) in our fats and oils industry structure.

The uptrend in livestock production and slaughter is largely responsible for gains in tallow production. Expansion in the rendering industry and more efficient recovery of the fats are also factors. Traditional domestic markets for tallow—soap—have been reduced and new ones—animal feeds— have emerged. But the big expansion was in the export market which has developed into the largest single outlet. The total export value (Census) of inedible tallow and grease in 1970/71 was $244 million, an important contribution to the U.S. balance of payments.

Tallow production[1] increased sharply from 2.3 billion pounds in the early 1950's to an estimated 5.4 billion for 1971/72; the average annual rate of increase was 4%. The estimated value of output (wholesale) rose from $150 million to approximately $430 million this year.

### Tallow Output Dependent on Byproducts of Livestock and Poultry Industries

The rendering and meatpacking industries are the principal producers of inedible animal fats. Production is determined by the supply of byproducts from the livestock and poultry industries, and the volume of animal wastes salvaged for rendering has increased. These byproducts are processed for lack of suitable alternative methods of disposal. Thus, the rendering industry is recycling inedible animal byproducts and waste materials into useful commodities, an important function in this age of ecology.

Rendering is the process by which tallow and other byproducts (mainly meat meal and tankage) are obtained from animal raw materials—discarded or rejected parts of animals, including fat, skin, meat, bones, offal, and so forth. Renderers also pick up dead stock from farmers, feedlots, slaughtering plants, as well as fat, grease and bones from restaurants, markets and food stores.

The U.S. rendering industry has been continuously confronted with the problem of finding markets for the ever-increasing surplus of tallow above domestic requirements. Domestic use has gone up about 2% per year over the past 20 years, but tallow production has gained at twice that rate. Exports have absorbed the excess and in 1970/71 represented one-half of total output.

### Uptrend in Tallow Production to Continue

The growth in production of inedible tallow and greases is largely associated with the secular uptrend in livestock slaughter and meat consumption. And tallow output is largely a function of cattle slaughter and beef production. Between 1950 and 1970, tallow and grease output rose 126%, cattle slaughter was up 115%, and beef output gained 150%. The increase in beef production averaged about 5% a year.

Growing demand for beef in the 1970's, resulting from increasing population and continued gains in disposable income, is expected to provide a strong stimulus for beef production. Cattle slaughter and beef

---

[1] "Inedible tallow" or "tallow" as used in this paper is synonymous with "inedible tallow and greases". Census reports on production, use and stocks do not show separate statistics for tallow or grease. Tallow output is dependent on cattle slaughter and probably accounts for over three-fourths the total. Grease production is dependent largely on hog slaughter.

Table 19.--Tallow, inedible, and greases: Supply, disposition and price, 1950-71

| Year beginning October | Supply | | | | Disposition | | | Price per pound Chicago | |
|---|---|---|---|---|---|---|---|---|---|
| | Apparent production 1/ | Imports | Stocks, Oct. 1 | Total | Exports and shipments | Domestic disappearance: Total | Domestic disappearance: Per capita | Prime | No. 1 |
| | Million pounds | Million pounds | Million pounds | Million pounds | Million pounds | Million pounds | Pounds | Cents | Cents |
| 1950 | 2,343 | 4 | 279 | 2,626 | 509 | 1,777 | 11.7 | 13.5 | 11.9 |
| 1951 | 2,268 | 1 | 340 | 2,609 | 720 | 1,550 | 10.0 | 6.3 | 5.1 |
| 1952 | 2,616 | 1 | 340 | 2,957 | 1,070 | 1,523 | 9.7 | 4.3 | 3.6 |
| 1953 | 2,661 | 3 | 363 | 3,027 | 1,186 | 1,574 | 9.8 | 6.2 | 5.6 |
| 1954 | 2,875 | 4 | 268 | 3,147 | 1,265 | 1,620 | 9.9 | 7.0 | 6.5 |
| 1955 | 3,215 | 2 | 260 | 3,477 | 1,494 | 1,677 | 10.1 | 6.9 | 6.3 |
| 1956 | 3,147 | 3 | 306 | 3,456 | 1,431 | 1,786 | 10.6 | 7.1 | 6.6 |
| 1957 | 2,896 | 2/ | 239 | 3,135 | 1,107 | 1,799 | 10.5 | 7.6 | 7.0 |
| 1958 | 3,214 | 2 | 230 | 3,444 | 1,311 | 1,808 | 10.3 | 6.6 | 6.0 |
| 1959 | 3,540 | 2/ | 327 | 3,867 | 1,718 | 1,806 | 10.2 | 5.2 | 4.5 |
| 1960 | 3,561 | 2/ | 343 | 3,904 | 1,769 | 1,745 | 9.7 | 6.0 | 5.3 |
| 1961 | 3,776 | 2 | 389 | 4,167 | 1,710 | 2,093 | 11.4 | 5.1 | 4.6 |
| 1962 | 3,829 | 2 | 365 | 4,196 | 1,738 | 2,124 | 11.4 | 5.0 | 4.5 |
| 1963 | 4,604 | 2 | 334 | 4,940 | 2,338 | 2,320 | 12.2 | 5.9 | 5.4 |
| 1964 | 4,461 | 2 | 282 | 4,743 | 2,155 | 2,239 | 11.7 | 7.8 | 7.3 |
| 1965 | 4,419 | 1 | 351 | 4,770 | 1,962 | 2,393 | 12.3 | 7.3 | 6.8 |
| 1966 | 4,766 | 4 | 417 | 5,187 | 2,214 | 2,565 | 13.0 | 5.5 | 5.0 |
| 1967 | 4,751 | 6 | 409 | 5,166 | 2,212 | 2,577 | 12.9 | 4.6 | 4.2 |
| 1968 | 4,601 | 4 | 377 | 4,982 | 2,009 | 2,670 | 13.2 | 5.8 | 5.4 |
| 1969 | 4,830 | 7 | 304 | 5,141 | 2,051 | 2,721 | 13.3 | 7.5 | 7.0 |
| 1970 3/ | 5,250 | 7 | 370 | 5,627 | 2,591 | 2,627 | 12.8 | 7.6 | 6.8 |
| 1971 4/ | 5,400 | 6 | 409 | 5,815 | 2,600 | 2,800 | 13.5 | 5/7.0 | 5/6.9 |

1/ Apparent production computed from Census factory consumption, net foreign trade, and change in stocks. 1966-69 Census reported production. 2/ Less than 500,000 pounds. 3/ Preliminary. 4/ Forecast. 5/ October average.

Table 20.--Tallow, inedible, and greases: Utilization, by products, 1950-70

| Year beginning October | Non-food products | | | | | | |
|---|---|---|---|---|---|---|---|
| | Soap | Animal feeds | Fatty acids | Lubricants and similar oils | Other | Loss | Total |
| | -- Million pounds -- | | | | | | |
| 1950 | 1,280 | --- | 250 | 28 | 217 | 1 | 1,777 |
| 1951 | 1,103 | --- | 199 | 24 | 224 | --- | 1,550 |
| 1952 | 1,008 | --- | 237 | 24 | 252 | 1 | 1,523 |
| 1953 | 967 | 71 | 245 | 25 | 258 | 8 | 1,574 |
| 1954 | 861 | 174 | 267 | 38 | 268 | 12 | 1,620 |
| 1955 | 840 | 263 | 290 | 38 | 229 | 17 | 1,677 |
| 1956 | 788 | 383 | 284 | 34 | 285 | 13 | 1,786 |
| 1957 | 744 | 542 | 249 | 29 | 232 | 3 | 1,799 |
| 1958 | 732 | 476 | 353 | 66 | 182 | --- | 1,808 |
| 1959 | 735 | 439 | 391 | 80 | 162 | --- | 1,806 |
| 1960 | 732 | 443 | 351 | 70 | 151 | --- | 1,745 |
| 1961 | 702 | 732 | 402 | 79 | 177 | --- | 2,093 |
| 1962 | 688 | 774 | 433 | 78 | 151 | --- | 2,124 |
| 1963 | 660 | 861 | 478 | 91 | 230 | --- | 2,320 |
| 1964 | 690 | 714 | 530 | 102 | 203 | --- | 2,239 |
| 1965 | 649 | 855 | 575 | 107 | 208 | --- | 2,393 |
| 1966 | 665 | 972 | 547 | 98 | 283 | --- | 2,565 |
| 1967 | 631 | 990 | 576 | 89 | 291 | --- | 2,577 |
| 1968 | 637 | 1,061 | 585 | 98 | 289 | --- | 2,670 |
| 1969 | 601 | 1,093 | 610 | 97 | 320 | --- | 2,721 |
| 1970 1/ | 615 | 1,140 | 568 | 89 | 214 | --- | 2,627 |

1/ Preliminary. Data based on Census reports.

output are projected to increase one-third by 1980. Based on these projections, the rendering industry should be producing around 7 billion pounds of inedible tallow in 1980—a sharp increase from the 5.2 billion pounds produced in 1970/71.

**Beef and tallow: Selected statistics, 1950-70 and 1980 projected**

| Year beginning October | Commercial: Cattle slaughter | Commercial: Beef production | Inedible tallow production |
|---|---|---|---|
| | *Million head* | *Billion pound* | *Billion pound* |
| 1950 | 16.6 | 8.7 | 2.3 |
| 1955 | 26.3 | 13.9 | 3.2 |
| 1960 | 25.5 | 14.8 | 3.6 |
| 1965 | 33.7 | 19.3 | 4.4 |
| 1970 | 35.7 | 21.8 | 5.2 |
| 1980 projected | [1] 46-47 | [1] 29.0 | 7.0 |
| | *Percent* | *Percent* | *Percent* |
| Average annual rate of increase 1950-70 | 4.2 | 4.9 | 4.3 |

[1] "Changes in Cattle and Hog Production in the U.S. During the 1970's," speech by Don Paarlberg, USDA's Director of Agricultural Economics, to the American Meat Institute, October 29, 1970.

## Tallow and Beef Output Highly Correlated

A correlation analysis, relating inedible tallow production and commercial beef production for 1950-71, showed a close relationship. Beef output explained about 96% of the variation in tallow output. A straight line fitted to these data statistically (method of least squares) is illustrated in figure 1. The straight line equation is $YC = .020 + .2351X$, where YC is estimated tallow production and X is beef production.

Another simple correlation analysis was run relating inedible tallow production and cattle slaughter. Here again there was high positive correlation with commercial slaughter explaining about 89% of the variation in tallow output (figure 2). The straight line estimating equation is $YC = -.551 + .1543X$, where YC is estimated tallow production and X is cattle slaughter.

These analyses provide useful tools for forecasting tallow production from various levels of beef output and cattle slaughter. However, changes in other economic factors—such as prices of tallow and competitive fats and oils, and domestic and export demand for tallow—will have some impact on the level of tallow produced by the U.S. rendering industry.

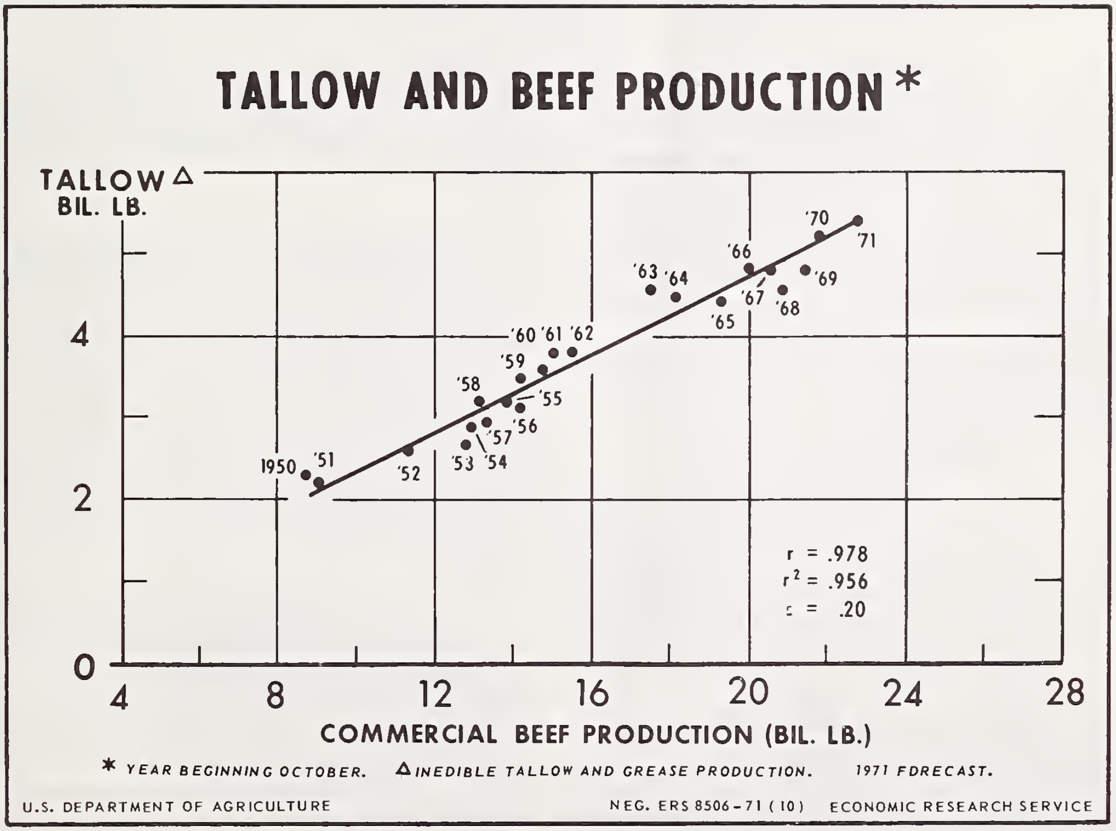

Figure 1

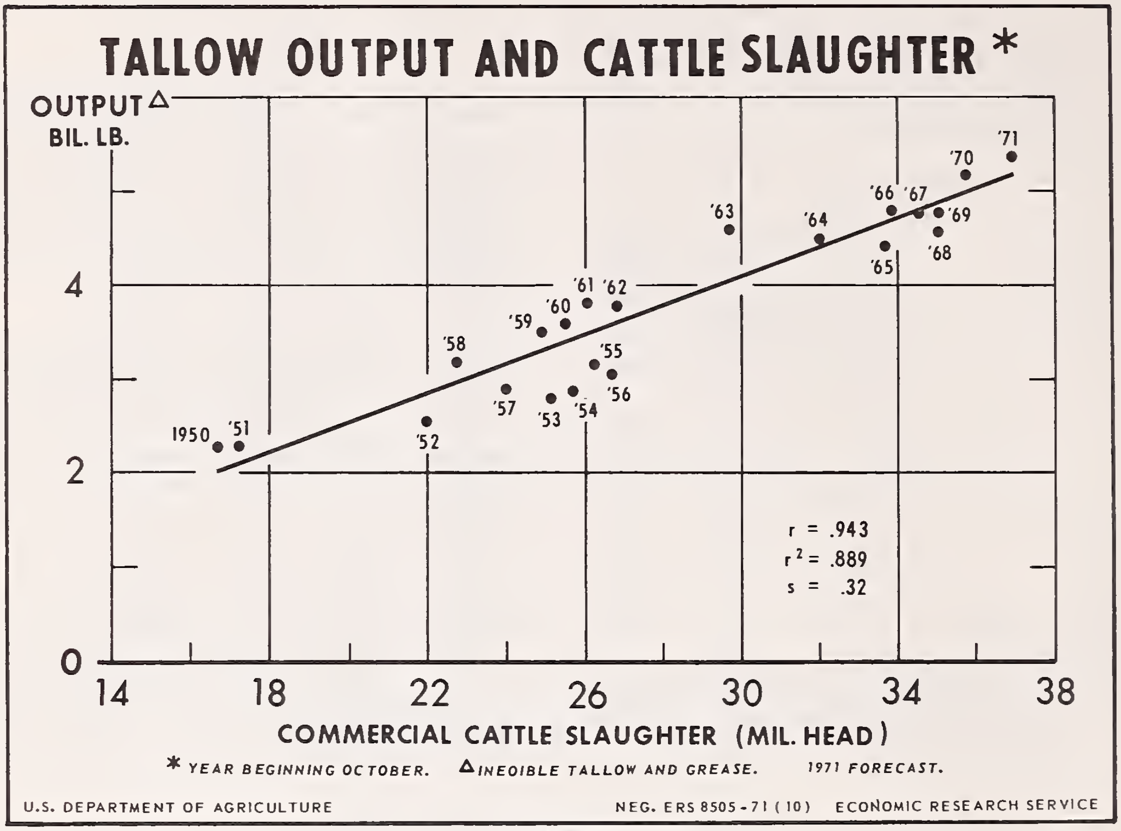

Figure 2

### Marketing Trends

Marketing of inedible tallow has been one of the rendering industry's greatest challenges over the last 20 years. This situation developed with the tremendous increase in production coupled with a substantial loss of the traditional soap market—even while tallow use increased in animal feeds and fatty acids. Exports have forestalled the accumulation of large stocks but demand has been unable to lift prices much above 6-7 cents per pound.

Domestic tallow use expanded at average annual rate of about 2% during 1950-70 while the annual increment for exports was nearly 10%.

Inedible tallow markets

| Market | Year beginning October | | | | |
|---|---|---|---|---|---|
| | 1950 | Share | 1970 | Share | Average annual rate of change |
| | *Million pound* | *Percent* | *Million pound* | *Percent* | *Percent* |
| **Domestic** . . . | 1,777 | 78 | 2,627 | 50 | +2 |
| Soap . . . . . | 1,280 | | 615 | | -4 |
| Animal feeds | [1]71 | | 1,140 | | +22 |
| Fatty acids | 250 | | 568 | | +5 |
| **Exports** . . . . | 509 | 22 | 2,591 | 50 | +10 |

[1] 1953—data for earlier years not available.

Prospective trends in meat and poultry consumption point to an increasing surplus of inedible tallow above domestic markets. Devising outlets for the additional output will apparently remain a major marketing challenge.

### Domestic Market Expands Slowly

The U.S. market for inedible tallow has expanded from 1.8 billion pounds in 1950 to 2.6 to 2.7 billion in the last 3 marketing years. During the expansion there were divergent trends between the leading outlets and the growth pattern has not been consistent. Beside soapmaking, the principal domestic uses for tallow and greases are in animal feed mixing, and for fat splitting. Tallow also is used in lubricants and similar oils, paints, varnishes, printing inks, and many other industrial applications.

### Animal Feeds Major Tallow Market

The largest domestic market for inedible tallow is animal feeds. Use of tallow in feeds gained rapidly after starting in the early 1950's. The volume increased from a mere 71 million pounds in 1953 to a record 1,140 million in 1970/71, reflecting increased production of commercial feeds and more widespread use of fats in feeds.

The average annual rate of increase for tallow in feeds during 1953-70 was 22%. The sharpest gains of about 29% were achieved prior to the mid-1960's; more recently the growth rate has slowed to about 4%. In 1953, tallow going into animal feeds accounted for only 5% of total domestic offtake but in 1970/71 it comprised 43%.

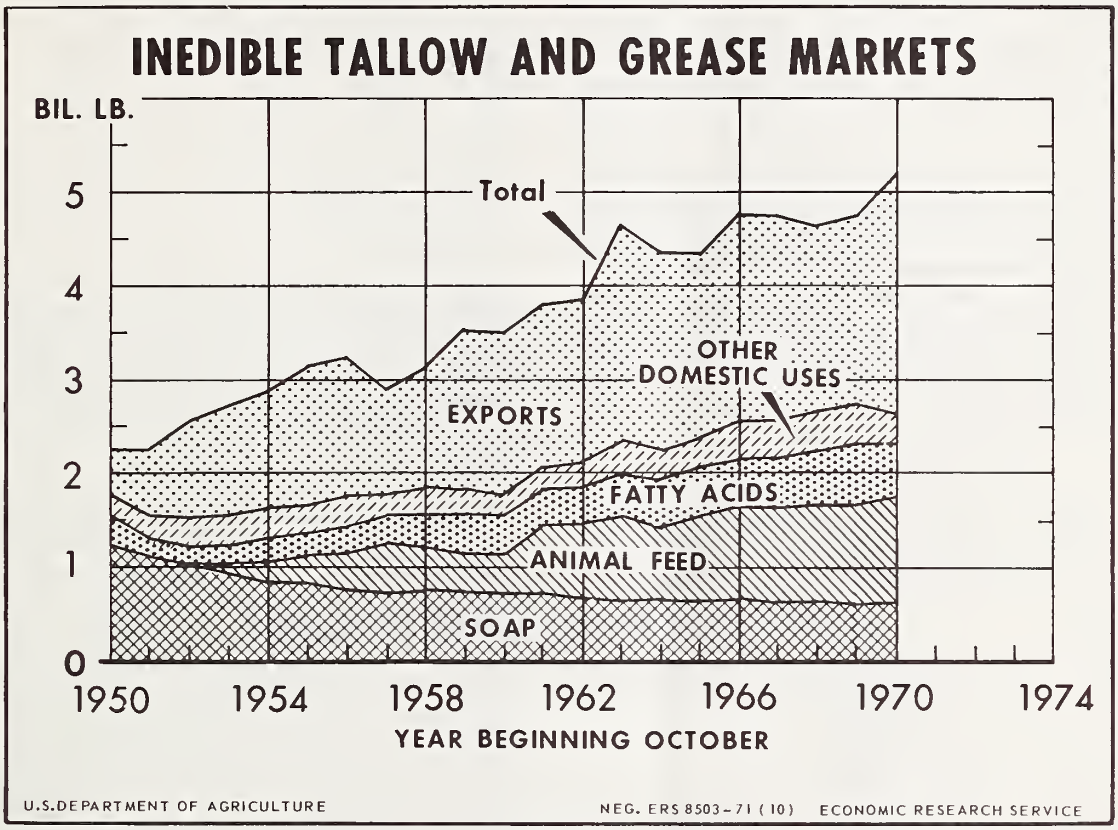

Figure 3

Tallow is widely used in prepared livestock and poultry feeds by all sizes of feed-mixing mills; the level varies from 0.5% to 10%. Based on shipments of prepared feeds reported in the 1967 Census of manufactures, tallow was equal to a little over 1% of the total. The highest use rate is usually found in high-efficiency broiler rations, where the 4% fat level is common practice.

Data on total output of commercially prepared feeds are not complete and information on fats added to specific types of rations is not available. But the limited trend data available from Census on mixed feed output and tallow use show a close relationship.

Fats are added to feeds for various reasons: (1) to raise the energy value, (2) to add a growth factor, (3) to increase feed efficiency, (4) to increase palatability, (5) to reduce dustiness, (6) to make for easier handling, (7) to reduce wear (lubricant) on handling, mixing, pelleting, and other machinery, (8) to aid in homogenizing and stabilizing the mixture of fine particled feed additives, and (9) to give the feed a better appearance.

Prepared feeds and tallow

| Census year | Prepared feeds[1] | | Tallow used in all feeds | | |
|---|---|---|---|---|---|
| | Total | Complete poultry ration | Total | Proportion of total prepared feeds | Proportion of complete poultry feeds |
| | *Million tons* | *Million tons* | *Million tons* | *Percent* | *Percent* |
| 1954 ... | 27.6 | 13.4 | 0.05 | 0.2 | 0.4 |
| 1958 ... | 31.4 | 13.9 | 0.23 | 0.7 | 1.6 |
| 1963 ... | 35.6 | 14.5 | 0.39 | 1.1 | 2.7 |
| 1967 ... | 39.9 | 15.3 | 0.49 | 1.2 | 3.2 |

[1] Shipments from commercial feed manufacturing plants as reported in Census of Manufactures.

The cost of fats in relation to other sources of energy is an important factor determining the demand for these ingredients in feed mixing. The relatively low price for tallow has been a major factor boosting its use in feed manufacturing.

Use of tallow in prepared feeds should keep gaining but probably at a moderate pace. This prospect is based primarily on the uptrend in livestock output, rising production of commercially prepared feeds, more widespread application of fats to feeds, and a slight increase in the level of fat added.

## Detergent Displacement of Soap Slows

Soapmaking, once the most important nonfood outlet for fats and oils, has been declining since the end of World War II. Synthetic detergents have captured a large part of the soap market. Most synthetic detergents are made from petroleum sources. The great inroads made by detergents in the soap market leveled off during the 1960's. Detergents may have reached the limit of their share of the soap and detergent market, unless they become more successful in penetrating the bar soap market. About 90% of the soap being used now is toilet bar or hand bar soap. Most of the remaining soap is used by commercial laundries.

Soap and synthetic detergents[1]

| Item | Calendar year | | | | |
|---|---|---|---|---|---|
| | 1950 | 1955 | 1960 | 1965 | 1970 |
| | *Billion pounds* | | | | |
| Estimated total sales | 4.3 | 4.4 | 5.2 | 6.0 | 6.7 |
| Soap[2] | 2.9 | 1.6 | 1.2 | 1.1 | 1.1 |
| Detergents | 1.4 | 2.8 | 4.0 | 4.9 | 5.6 |
| | *Pounds* | | | | |
| Per capita | 28 | 26 | 29 | 31 | 33 |
| Soap | 19 | 9 | 7 | 6 | 5 |
| Detergents | 9 | 17 | 22 | 25 | 28 |
| | *Percent* | | | | |
| Percentage distribution: | | | | | |
| Soap | 67 | 36 | 24 | 19 | 16 |
| Detergent | 33 | 64 | 76 | 81 | 84 |

[1] Estimates of the Soap and Detergent Association. [2] Non-liquid.

## Soap Market For Tallow Halved

The displacement of soap by synthetic detergents has, of course, been accompanied by reduced demand for fats and oils from soapers—from 1.9 billion pounds in 1950 to 0.8 billion last year. Inedible tallow is used most extensively by the soap industry in the manufacture of slow-lathering products. Coconut oil is the major oil used in quick-lathering products. These fats and oils have about replaced all others utilized in soap.

During 1950-70 the use of tallow by the soap industry declined 56%—from just under 1.4 billion pounds to 0.6 billion. The average annual rate of decline was about 4% over the 20-year span. The sharpest drop occurred during the 1950's when the rate averaged 6% per year. But in the 1960's tallow consumption in soap declined less than 2% annually.

Tallow use in soap has stabilized at about 0.6 billion pounds in the past few years. This market may require more fats in the future.

Fats and oils used in soap

| Calendar year | Total | Tallow grease | | Coconut oil | |
|---|---|---|---|---|---|
| | | Volume | %of total | Volume | % of total |
| | *Million pound* | *Million pound* | *Percent* | *Million pound* | *Percent* |
| 1950 ... | 1,873 | 1,363 | 73 | 257 | 14 |
| 1955 ... | 1,181 | 864 | 73 | 173 | 15 |
| 1960 ... | 935 | 746 | 80 | 145 | 19 |
| 1965 ... | 820 | 651 | 79 | 145 | 18 |
| 1970 ... | 779 | 602 | 77 | 164 | 21 |

The Nation is concerned with the problem of water pollution attributed to the use of phosphates in detergents. Some industry sources believe the long-run effect of this environmental concern will be lowering of the phosphate level in various detergents from 50% to near 35%. Others in the industry have widely different opinions.

USDA scientists have proposed a modified soap to replace phosphate detergents as a means of reducing water pollution. It is reported to wash as efficiently in hard water as phosphate detergents. The soap's effectiveness in hard water is achieved by the addition of any one of several fat-based compounds that act as lime-soap dispersing agents and also a nonphosphate builder. Soap is still the best detergent in soft water. In hard water, however, it forms a curd—the familiar "ring around the bathtub"—that is deposited on clothes during washing. In the experimental soap formulations, the lime-soap dispersing agent prevents this curd formation in hard water.

Any shift from phosphate detergents to fat-based soap compounds likely would increase the demand for tallow, palm oil, and vegetable oil foots. The economics of using fat-based soaps compared with other materials needs to be evaluated. Large increases in tallow output are projected through the 1970's, so more raw materials may be available if needed for soap. If the switch to fat-based soap compounds materializes, the resulting demand probably could be met with the United States still maintaining a strong position in the export market for tallow and grease.

## Fatty Acids a Growth Market for Tallow

U.S. production of fatty acids has nearly doubled during the past 2 decades, to more than 1.1 billion pounds in 1970. The growth has been stimulated by new uses and improved processing techniques. Accordingly, the use of fats and oils in these products has risen sharply.

Fatty acid production and fats and oils

| Calendar year | Fatty acid production (all grades) | Fats and oils used in producing fatty acids | | |
|---|---|---|---|---|
| | | Total | Tallow and grease | Tall oil |
| | *Million pounds* | *Million pounds* | *Million pounds* | *Million pounds* |
| 1950 . . . . . | 651 | 501 | 229 | ([1]) |
| 1955 . . . . . | 517 | 606 | 278 | ([1]) |
| 1960 . . . . . | 708 | 1,245 | 386 | 674 |
| 1965 . . . . . | 1,041 | 1,735 | 540 | 1,023 |
| 1970 . . . . . | 1,123 | 2,004 | 585 | 1,230 |

[1] Data not available.

Inedible tallow and tall oil are the principal raw materials for fatty acids- providing about 90% of total fats and oils utilized. Coconut oil and vegetable oil foots (soapstock) account for the remainder. Tallow usage during 1950-70 jumped from 0.2 billion pounds to 0.6 billion. The annual growth rate was about 5%—averaging 6% in the 1950's and 4% in the 1960's. During the past decade tallow has averaged about 30% of total fatty acid raw materials. This should continue as long as the price of inedible tallow remains competitive. Furthermore, tallow is the major source of stearic acid.

The potential of fatty acids continues to expand in almost every segment of industry. Fatty acids and chemical derivatives are used in soap and detergents, protective coatings, textile processing, rubber manufacture, lubricants, pharmaceuticals, cosmetics and toiletries, plastics, metallic driers, cutting oils, lubricants napalm (jelled gasoline) and many chemical intermediates. Unfortunately, there is a dearth of information on use of fatty acids in end products.

## U.S. Dominates World Tallow Market

The United States is the world's major producer, consumer, and exporter of tallow and grease. World production increased from an average 6 billion pounds in 1956-60 to nearly 10 billion in calendar 1970. Over one-half of the increase occurred in the United States. Since the mid-1950's we have accounted for 55 to 60% of world tallow output.

Other leading producers of tallow are Australia, Argentina, Canada, France, West Germany, New Zealand, the United Kingdom and the USSR.

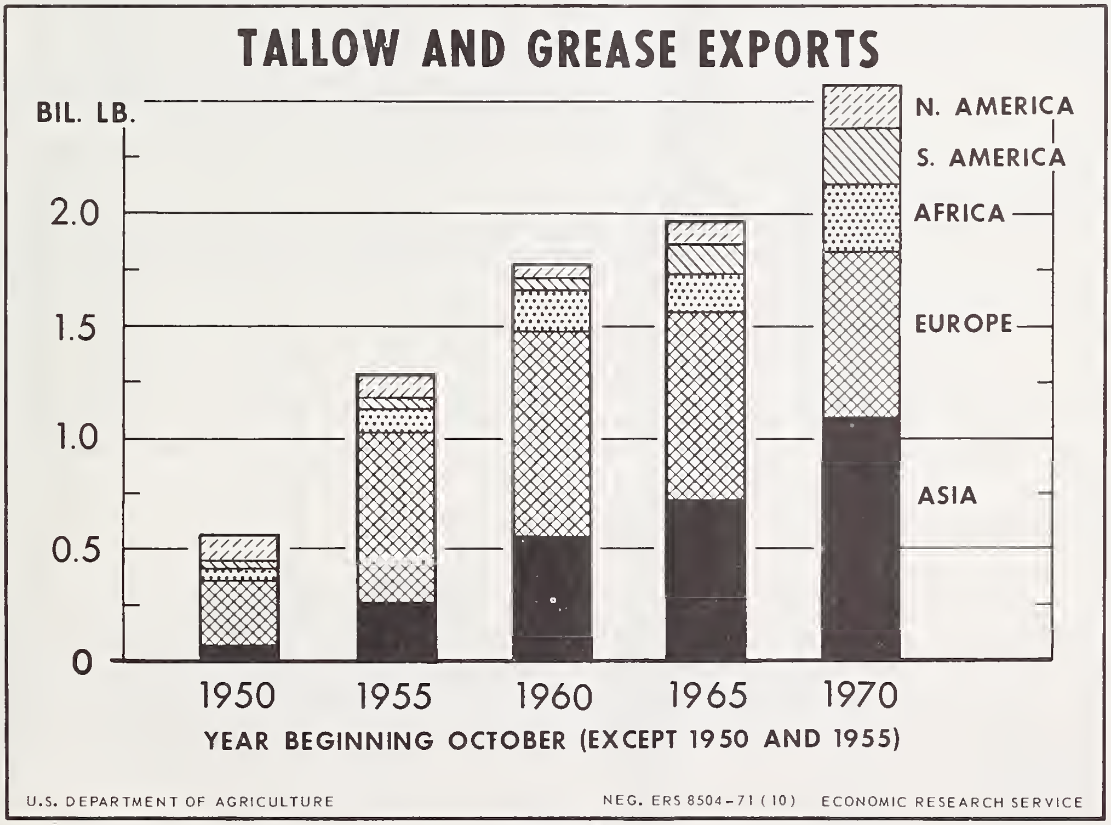

Figure 4

World exports of tallow and grease also have increased sharply, from about 2 billion pounds per year in 1956-60 to 3.4 billion in calendar 1970. Most of the gain occurred in U.S. exports which increased 57% during the period. We now account for about two-thirds of world trade in tallow. Major U.S. competitors are

## Table 21.--Tallow, inedible, and greases: U.S. exports, by country of destination, and total value, 1960-70

| Country of destination | 1960 | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 [1] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Year beginning October | | | | | | | | | | |
| | -- Million pounds -- | | | | | | | | | | |
| **North America** | | | | | | | | | | | |
| Canada | 24 | 26 | 32 | 33 | 25 | 18 | 11 | 10 | 12 | 16 | 15 |
| Cuba | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dominican Republic | 4 | 7 | 6 | 7 | 11 | 10 | 14 | 14 | 18 | 17 | 23 |
| El Salvador | 5 | 15 | 12 | 17 | 14 | 11 | 14 | 22 | 23 | 25 | 30 |
| Guatemala | 14 | 13 | 20 | 18 | 17 | 21 | 33 | 39 | 11 | 25 | 34 |
| Mexico | 4 | 3 | 1 | 1 | 3 | 6 | 5 | 9 | 30 | 79 | 47 |
| Other | 15 | 17 | 19 | 27 | 23 | 30 | 36 | 43 | 42 | 59 | [3]72 |
| Total | 68 | 81 | 91 | 103 | 93 | 96 | 112 | 137 | 135 | 221 | 221 |
| **South America** | | | | | | | | | | | |
| Columbia | 24 | 28 | 21 | 22 | 25 | 19 | 33 | 55 | 58 | 35 | 82 |
| Ecuador | 16 | 18 | 19 | 30 | 23 | 35 | 33 | 36 | 27 | 32 | 28 |
| Peru | 11 | 23 | 19 | 52 | 26 | 45 | 22 | 24 | 29 | 21 | 29 |
| Venezuela | 9 | 15 | 12 | 23 | 22 | 18 | 15 | 25 | 18 | 12 | 24 |
| Other | 2 | 5 | 2 | 26 | 13 | 4 | 1 | 2 | 1 | 1 | [4]73 |
| Total | 63 | 88 | 73 | 153 | 108 | 121 | 104 | 142 | 133 | 101 | 236 |
| **Western Europe** | | | | | | | | | | | |
| Belgium-Luxembourg | 24 | 21 | 17 | 38 | 16 | 13 | 17 | 10 | 12 | 29 | 75 |
| France | 3 | 11 | 10 | 24 | 38 | 9 | 28 | 10 | 8 | 13 | 23 |
| Germany-West | 119 | 84 | 94 | 102 | 76 | 80 | 50 | 57 | 48 | 50 | 48 |
| Italy | 213 | 229 | 197 | 171 | 128 | 145 | 128 | 102 | 71 | 67 | 71 |
| Netherlands | 215 | 218 | 186 | 301 | 188 | 207 | 183 | 200 | 105 | 158 | 221 |
| Norway | 2 | 4 | 5 | 5 | 3 | 4 | 4 | 4 | 3 | 4 | 8 |
| Spain | 62 | 101 | 116 | 101 | 104 | 106 | 116 | 114 | 135 | 131 | 130 |
| Switzerland | 8 | 20 | 32 | 50 | 54 | 26 | 39 | 13 | 13 | 10 | 20 |
| United Kingdom | 30 | 19 | 19 | 59 | 82 | 64 | 55 | 59 | 46 | 59 | 64 |
| Other | 16 | 3 | 17 | 29 | 26 | 11 | 29 | 30 | 24 | 31 | 40 |
| Total | 692 | 711 | 694 | 880 | 715 | 665 | 649 | 597 | 465 | 552 | 700 |
| **Eastern Europe** | | | | | | | | | | | |
| Poland | 44 | 70 | 65 | 128 | 89 | 55 | 29 | 47 | 17 | 46 | 49 |
| Yugoslavia | 22 | 33 | 25 | 13 | 35 | 2 | 5 | [2] | --- | --- | --- |
| U.S.S.R. (Europe and Asia) | 198 | 66 | 33 | 122 | 167 | 101 | --- | --- | --- | --- | --- |
| Other | --- | 6 | 1 | 9 | 10 | 5 | [2] | --- | --- | --- | --- |
| Total | 264 | 175 | 124 | 272 | 301 | 163 | 34 | 47 | 17 | 46 | 49 |
| **Africa** | | | | | | | | | | | |
| Algeria | --- | --- | 1 | 12 | 23 | 20 | 23 | 30 | 18 | 31 | 46 |
| Egypt | 62 | 91 | 106 | 130 | 75 | 86 | 137 | 102 | 102 | 120 | 132 |
| Ghana | --- | [2] | 5 | 31 | 11 | 15 | 34 | 42 | 45 | 33 | 38 |
| Morocco | 17 | 23 | 20 | 25 | 24 | 26 | 25 | 31 | 25 | 34 | 33 |
| Union of South Africa | 57 | 16 | 15 | 32 | 39 | 27 | 21 | 29 | 25 | 18 | 18 |
| Other | 8 | 7 | 9 | 20 | 16 | 15 | 25 | 24 | 23 | 17 | 30 |
| Total | 144 | 137 | 156 | 250 | 188 | 189 | 265 | 258 | 238 | 253 | 297 |
| **Asia** | | | | | | | | | | | |
| Turkey | [2] | 32 | 46 | 50 | 16 | 53 | 30 | 14 | 40 | 16 | 50 |
| China (Taiwan) | 27 | 34 | 57 | 38 | 51 | 36 | 54 | 57 | 45 | 44 | 29 |
| Japan | 407 | 298 | 341 | 422 | 458 | 506 | 518 | 562 | 509 | 409 | 426 |
| Korea | 21 | 34 | 41 | 35 | 38 | 41 | 62 | 75 | 84 | 99 | 146 |
| India | [2] | [2] | 1 | 1 | 91 | 3 | 223 | 168 | 241 | 150 | 285 |
| Iran | 15 | 34 | 34 | 38 | 29 | 32 | 40 | 38 | 34 | 37 | 34 |
| Pakistan | 33 | 57 | 50 | 60 | 38 | 25 | 100 | 92 | 48 | 99 | 89 |
| Philippines | 22 | 21 | 21 | 21 | 17 | 14 | 12 | 15 | 14 | 15 | 9 |
| Other | 14 | 8 | 9 | 12 | 9 | 15 | 8 | 8 | 5 | 7 | 16 |
| Total | 538 | 518 | 600 | 677 | 748 | 725 | 1,048 | 1,029 | 1,019 | 876 | 1,084 |
| Total Exports | 1,769 | 1,710 | 1,738 | 2,338 | 2,155 | 1,959 | 2,212 | 2,211 | 2,007 | 2,050 | 2,588 |
| **Value of Exports** | | | | | | | | | | | |
| Total (mil. dol.) | 127 | 115 | 111 | 163 | 193 | 169 | 164 | 134 | 133 | 176 | 244 |
| Per pound (cents) | 7.2 | 6.7 | 6.4 | 7.0 | 9.0 | 8.6 | 7.4 | 6.0 | 6.6 | 8.6 | 9.4 |

---

[1] Preliminary. [2] Less than 500,000 pounds. [3] Includes 18 million pounds to Haiti and 15 million pounds to Honduras. [4] Includes 37 million pounds to Brazil and 29 million pounds to Argentina.

Bureau of Census.

Australia, Argentina, Canada, New Zealand, and West Germany.

U.S. and world tallow production and exports[1]

| Calendar year | Production |  |  | Exports |  |  |
|---|---|---|---|---|---|---|
|  | World | U.S. | Share | World | U.S. | Share |
|  | *Billion pound* | *Billion pound* | *Percent* | *Billion pound* | *Billion pound* | *Percent* |
| Average |  |  |  |  |  |  |
| 1956-60 . | 6.3 | 3.5 | 55 | 2.0 | 1.4 | 72 |
| 1961-65 . | 7.8 | 4.6 | 59 | 2.5 | 2.0 | 80 |
| 1968 . . . | 9.4 | 5.3 | 56 | 3.2 | 2.2 | 69 |
| 1969 . . . | 9.4 | 5.2 | 55 | 3.1 | 1.9 | 61 |
| 1970 . . . | 9.8 | 5.5 | 56 | 3.4 | 2.2 | 65 |

[1] Includes edible and inedible tallow and hog greases.

Japan is the world's leading importer of tallow and greases, accounting for about one-fifth of total world imports. The Netherlands is second, accounting for about a tenth of the world total, followed by India.

## Exports Most Important Market for Tallow

U.S. production of tallow has expanded at a much faster pace than domestic use, and a rising surplus has become available for export. U.S. exports have gained sharply from 0.5 billion pounds in 1950 to a record 2.6 billion pounds for the marketing year ended September 30, 1971. The average annual rate of increase was 10% over the 20 years. Exports annually account for about one-half of U.S. output. The Census value of exports in 1970/71 totaled $244 million, averaging 9.4 cents per pound.

U.S. tallow production and exports[1]

| Year beginning October | Production | Exports | Share |
|---|---|---|---|
|  | *Billion pound* | *Billion pound* | *Percent* |
| 1950 . . . . . . . | 2.3 | 0.5 | 22 |
| 1955 . . . . . . . | 3.2 | 1.5 | 47 |
| 1960 . . . . . . . | 3.6 | 1.8 | 50 |
| 1965 . . . . . . . | 4.4 | 2.0 | 45 |
| 1970 . . . . . . . | 5.3 | 2.6 | 49 |

[1] Inedible tallow and greases.

Japan, the Netherlands, India, UAR (Egypt), Spain, South Korea and Pakistan are the major markets for U.S. tallow. Collectively they received 55% of the 1970/71 U.S. shipments. Brisk foreign demand for tallow reflects its price; it is one of the lowest priced fat or oil in the world today. Also, demand for fats in industrial and developing countries has been trending upward.

U.S. tallow prices are likely to continue at a relatively low level, resulting in a strong competitive position with other fats and oils on the world market. The principal competitors of tallow on the world market are palm oil, coconut oil, and fish oil. These oils can be used for soap or for edible purposes, but their price is dependent upon competitive vegetable oils. Use of tallow in animal feeds continues to grow abroad and other industrial outlets are being explored and developed.

Some of the inedible tallow exported from the United States is reconstituted and used for edible purposes abroad. Foreign technicians can split inedible fats into chemically pure fatty acids and reconstitute them into edible products. This is not permitted in the United States under existing food and drug laws.

## Government Role in Tallow Exports

USDA and the rendering industry have cooperated in developing and encouraging the expansion of foreign markets for U.S. tallow through trade fairs and other trade promotion efforts. The government has financed export sales, mainly under Title I of P.L. 480 (foreign currency sales).

Tallow exports under P.L. 480 have varied widely. Program sales in fiscal year 1969 totaled 357 million pounds, 17% of total U.S. tallow exports. In fiscal 1971, however, they represented less than 1% of U.S. tallow moving abroad.

Barter and CCC credit sales have become large in the past 2 years and in fiscal 1971 totaled 1.0 billion pounds or 40% of total U.S. tallow exports.

In the future, as less developed countries strive for a higher standard of living, their fat consumption likely will increase. The United States probably will export more tallow and grease to help satisfy this increased demand for both edible and inedible fat. However, it will require continued promotional activities to expand markets in these developing countries.

U.S. tallow exports

| Export financing | Fiscal year ending June 30 |  |  |
|---|---|---|---|
|  | 1969 | 1970 | 1971[1] |
|  | *Million pounds* | *Million pounds* | *Million pounds* |
| Barter . . . . . . . . . . . . . . . . . . . | 29 | 546 | 852 |
| CCC credits . . . . . . . . . . . . . . | 7 | 99 | 125 |
| Other . . . . . . . . . . . . . . . . . . . | 1,720 | 1,275 | 1,442 |
| Total commercial . . . . . . . . | 1,756 | 1,920 | 2,419 |
| Title I—P.L. 480 . . . . . . . . . . . | 357 | 108 | 22 |
| Total exports . . . . . . . . . . . . . | 2,113 | 2,028 | 2,441 |

[1] Preliminary.

* * *

9C5126

# FORMULATION OF MARKET FORECASTS FOR THE U.S. SOYBEAN ECONOMY WITH AN ECONOMETRIC MODEL[1]

by

Jimmy L. Matthews, Agricultural Economist,
Abner W. Womack, Mathematical Statistician, and
Robert G. Hoffman, Agricultural Economist,
Economic and Statistical Analysis Division

*ABSTRACT: A U.S. soybean econometric model describes the demand relationships for soybeans and soybean products in a set of 13 equations. The supply side contains 6 regional acreage equations linked recursively to the demand side. The soybean market price indicated by the demand side of the model returns to the acreage (supply) side of the model, and in conjunction with other predetermined supply variables, determines soybean supply the following season. Soybean prices and total use are estimated for the 1971/72 and 1972/73 marketing season under specified assumptions. These include projected consumer income, assumed levels of P.L. 480 soybean oil shipment, and other factors. By varying the assumptions which influence the soybean economy, forecasters may derive alternative sets of demand and supply estimates.*

*KEY WORDS: Acreage, forecasting, models, prices, soybean meal, soybean oil, soybeans.*

Statistical models have long been basic tools in market forecasting. They have generally proved useful in analysis for the analyst aware of their limitations. No model has the capacity to generate "the forecast". Its main function is to assist the forecaster in obtaining a more systematic understanding of highly complex related events. This can be done with big models, small models, or with individual relationships.

This paper presents the results of a particular model system for the U.S. soybean economy, and explains how these results can be used in formulating judgements about possible price, production, and consumption adjustments for soybeans and soybean products in the 1971/72 and 1972/73 marketing years. A brief description of the development of the model is given, followed by a discussion of how it can be used in formulating conditional estimates.

Selected conditional estimates for the 1971/72 and 1972/73 marketing years are presented along with the major assumptions employed. Illustrative implications of changing assumptions are given. The reader may then develop alternative projections using the model and his own assumptions.

## Development of Model

The basic model was initially developed by James P. Houck and others under a joint contract between USDA and the University of Minnesota.(1) Additional work has continued in ERS. This additional effort has resulted in a modification of some of the statistical relationships but has retained the basic theoretical structure. The model is an equilibrium model, with 13 simultaneous relationships describing the demand for soybeans and soybean products, and 6 supply response relationships describing regional acreage and production adjustments. The demand portion of the model is linked to the supply or regional acreage model recursively or in a cobweb specification. In a recursive model the results of one portion of the model are used as input into another portion of the model. For example, in this model estimated supplies from the supply portion are used in the demand model to determine equilibrium market prices and utilization of soybeans and soybean products. Price determinations in the current year are then used to estimate soybean supplies next year, and so on.

Perhaps the most difficult portion of this model is in describing the determination of the equilibrium set of values for prices and uses of soybeans and soybean products. In general, the demand model identifies several market outlets for soybeans and soybean products. Domestic consumption functions are specified for soybean meal, soybean oil, and soybeans in the U.S. and foreign markets. Allocation of soybeans among these market outlets along with prices for beans, meal, and oil are determined jointly. More importantly, allocations among markets and resulting prices are strongly influenced in the model by identification of the relevant demand shifters such as domestic and foreign livestock output, availability of supplies of competing oilseed meals, real growth rates in consumer incomes, and by programmed exports of U.S. soybean oil under P.L. 480.

---

[1] Based on results of a statistical analysis of the soybean economy for 1948-1970 using specified assumptions. Current information would suggest changes in the demand shifters and farm program assumptions used in this analysis. Furthermore, the estimates given in table 22 do not necessarily agree with "offical estimates" presented elsewhere in the FOS.

Determination of equilibrium values for jointly determined prices and quantities in such a complex demand model requires a simultaneous equation solution. Such a solution can be obtained by expressing the linear demand model in matrix notation and then performing a matrix inversion.[2] The result is a re-expression of the model in terms of 13 reduced form estimating equations. This set of equations expresses prices and quantities of soybeans and soybean products as a function of all the demand and supply shifters whose values are known independently either by assumption or prior knowlege. The coefficients on the demand shifters show the net impact of a unit change of those shifters on the variables of interest—namely, prices and the uses for soybeans and soybean products. Given values for all the independently determined demand and supply shifters, we can then determine the equilibrium values for all dependent variables in the demand block. These equilibrium values are a set of conditional estimates. These estimates thus rely on 2 basic assumptions: First, that the underlying model is an adequate representation of economic behavior in the soybean economy, and second, that independently derived values for all demand shifters are reasonable.

The remainder of this paper will show estimates for soybean prices and usage for the 1971/72 and 1972/73 marketing years. The estimates shown in table 22 are based on sets of values for the independently determined demand and supply shifters that are largely assumed or estimated separately. Alternatives to these values would lead to a new set of estimates for all soybean prices and uses. This is of key interest. Not all forecasters may agree, for example, on the estimated real growth rate in disposable consumer income. Moreover, it may be useful to measure the impact of more than one forecast of the estimated real growth rate holding all other factors constant. Also, assumptions about the key demand shifters can be refined as new information becomes available. Thus, the implications of such a change in demand shifters on the original estimate can be determined rather easily.

## Demand and Supply, 1971/72 and 1972/73

### Demand 1971/72

Table 22 contains a summary set of conditional estimates for soybeans prices, usage, production, and acreage. Since soybean production is determined in the model in a cobweb fashion, the set of estimates starts with a given soybean production of 1,186 million bushels (September Crop Report) for the 1971/72 marketing year. Given known values for all the other demand shifters, the model estimates an average farm price for soybeans of $3 per bushel, 4.1 cents per pound for soybean meal, and 12.3 cents per pound for soybean oil in the 1971/72 marketing year. Other estimates can be obtained from table 22.

### Assumptions

The primary interest for 1971/72 centers on assumptions concerning the demand shifters. Basic to the 1971/72 and 1972/73 forecasts are the following assumptions regarding demand shifters:

| | 1971/72 | 1972/73 |
|---|---|---|
| P.L. 480 oil exports | no change | no change |
| U.S. livestock output | +2.75 pct. | +2.75 pct. |
| Foreign livestock output | +1.5 pct. | +1.0 pct. |
| Foreign supplies of competitive oil | no change | +3.0 pct. |
| Foreign supplies of oilseed meals | no change | +3.0 pct. |
| U.S. real consumption expenditures | +5.0 pct. | +3.0 pct. |
| Production of U.S. soybeans | *1,186 mil. bu. | ** |
| Value of the U.S. dollar in soybean importing nations | no change | no change |

*September Crop Report.

**Soybean production is estimated by the model for 1972/73. Different production levels can be assumed if desired.

### Implications of Alternative Assumptions

Although these assumptions were developed in formulating the price and utilization estimates for soybeans shown in table 22, other perhaps equally valid alternatives may be considered. For example, if P.L. 480 soybean oil exports for 1971/72 were assumed to increase 100 million pounds, then the use of model parameters shown in table 23 would suggest soybean price estimates 3 cents per bushel higher and soybean oil prices about 1/2 cent a pound higher than those shown in table 22. Implications for the forecast presented in table 22 when other assumptions are changed can also be traced with the use of parameters in table 23. Another illustration was the 14 million bushel net increase of the soybean crop estimate from the September to November crop report. As indicated in column 3 of table 23, a 100 million bushel change in soybean production would change soybean price estimates by 60 cents per bushel in the opposite direction. Thus, a 14 million bushel increase in soybean supply would decrease farm prices 8 to 9 cents per bushel in the model. Assuming no change in the remaining factors, prices then would be expected to average about $2.92 for the 1971/72 marketing year.

---

[2] A statistical and mathematical discussion of the model can be obtained on request from the authors. Also, an elaboration of the mathematical and theoretical consideration can soon be obtained from Houck's forthcoming book or from other similar studies. (2)(3)

Table 22.--Soybean production, utilization, and prices by marketing year, 1969/70, 1970/71 preliminary, 1971/72 conditional estimates with alternative conditional estimates for 1972/73 1/

| Variable | Unit | Reported 1969/70 | Preliminary 1970/71 | Conditional estimate for 1971/72 | Conditional estimate for 1972/73 | Alternative conditional estimate for 1972/73 2/ | | |
|---|---|---|---|---|---|---|---|---|
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| Supply | | | | | | | | |
| Harvested acres 3/ | | | | | | | | |
| Lake | Mil. acres | 3.8 | 3.8 | 3.7 | 3.6 | | | |
| Corn Belt | Mil. acres | 21.0 | 22.0 | 22.3 | 24.6 | | | |
| Plains | Mil. acres | 2.0 | 2.2 | 2.0 | 3.1 | | | |
| Delta | Mil. acres | 8.1 | 8.3 | 8.1 | 8.3 | | | |
| Atlantic | Mil. acres | 2.6 | 2.6 | 2.7 | 3.2 | | | |
| Other | Mil. acres | 3.5 | 3.5 | 4.0 | 4.6 | | | |
| U.S. | Mil. acres | 41.0 | 42.4 | 42.8 | 47.4 | 45.0 | 46.5 | 49.0 |
| U.S. yield/harvested acres | Bu./acre | 27.5 | 26.8 | 27.7 | 27.8 | 27.8 | 27.8 | 27.8 |
| Total production | Mil. bu. | 1,126 | 1,136 | 4/1,186 | 1,317 | 1,251 | 1,293 | 1,360 |
| Feed and seed | Mil. bu. | 51 | 73 | 71 | 70 | 70 | 70 | 70 |
| Total less feed and seed | Mil. bu. | 1,075 | 1,063 | 1,115 | 1,247 | 1,181 | 1,223 | 1,290 |
| Domestic Crush | | | | | | | | |
| Total soybean crush | Mil. bu. | 737 | 760 | 728 | 800 | 780 | 792 | 814 |
| Soybean meal production | Bil. lb. | 35.2 | 36.1 | 34.6 | 38.4 | 37.4 | 38.0 | 39.1 |
| Soybean oil production | Mil. lb. | 7,904 | 8,261 | 7,950 | 8,735 | 8,495 | 8,646 | 8,892 |
| Domestic Consumption | | | | | | | | |
| Soybean meal | Bil. lb. | 27.0 | 26.8 | 25.6 | 28.5 | 27.8 | 28.3 | 29.3 |
| Soybean oil | Mil. lb. | 6,328 | 6,267 | 6,375 | 7,125 | 6,909 | 7,045 | 7,267 |
| Exports | | | | | | | | |
| Soybeans | Mil. bu. | 433 | 433 | 376 | 423 | 389 | 410 | 446 |
| Soybean meal | Bil. lb. | 8.0 | 9.1 | 8.8 | 9.5 | 9.6 | 9.7 | 9.8 |
| Soybean oil | Mil. lb. | 1,420 | 1,742 | 1,525 | 1,555 | 1,535 | 1,547 | 1,568 |
| Prices | | | | | | | | |
| Soybeans (Received by farmers) | $/bu. | 2.35 | 2.84 | 3.00 | 2.56 | 2.97 | 2.71 | 2.29 |
| Soybean meal (Decatur) | ¢/lb. | 3.92 | 3.9 | 4.1 | 3.9 | 4.1 | 4.0 | 3.8 |
| Soybean oil (Decatur) | ¢/lb. | 11.2 | 12.8 | 12.3 | 9.5 | 12.0 | 10.4 | 7.9 |
| Ending Stocks | | | | | | | | |
| Soybeans, August 31 | Mil. bu. | 230 | 99 | 111 | 134 | 123 | 130 | 141 |
| Soybean oil, September 30 | Mil. lb. | 543 | 755 | 768 | 823 | 819 | 822 | 825 |

---

1/ Conditional estimates based on specified assumptions. These estimates do not necessarily agree with "official estimates" presented elsewhere in the Fats and Oils Situation.

2/ These alternative demand estimates are derived by using other soybean production levels in lieu of the 47.4 million acres generated by the most likely set of model assumptions. Acreages of 45.0, 46.5 and 49.0 were considered likely to cover most production possibilities in 1972/73.

3/ 1971/72 harvested acreage is the current SRS estimate. See footnotes in table 24 for States included in region.

4/ September Crop Report estimate.

Table 23.--Immediate effect on soybean demand and prices for indicated changes in selected demand shifters

| Variable | Unit | 1970-71: preliminary (1) | P.L. 480 oil increase of 100 mil. lb. (2) | Production increase of 100 mil. bu. (3) | U.S. livestock output, 6% increase (4) | Foreign competitive oils, 3% increase (5) | Foreign livestock output, 2% increase (6) | U.S real consumption expenditures, 1% increase (7) | World oilseed meal supplies less U.S. exports, 3% increase (8) | Dollar depreciation of 10% (9) |
|---|---|---|---|---|---|---|---|---|---|---|
| Domestic Crush | | | | | | | | | | |
| Total soybean crush | Mil. bu. | 760 | 4.3 | 32.5 | 8.4 | -3.6 | -6.4 | 4.7 | -2.8 | -12 |
| Soybean meal production | Bil. lb. | 36.1 | .2 | 1.54 | .4 | -.17 | -.3 | .22 | -.13 | -.5 |
| Soybean oil production | Mil. lb. | 8,261 | 47 | 354 | 90 | -40 | -70 | 51 | -30 | -140 |
| Domestic Consumption | | | | | | | | | | |
| Soybean meal | Bil. lb. | 26.8 | .16 | 1.42 | .77 | -.14 | -.30 | .15 | .38 | -.7 |
| Soybean oil | Mil. lb. | 6,267 | -40 | 320 | .70 | 33 | -54 | 49 | -24 | -120 |
| Exports | | | | | | | | | | |
| Soybeans | Mil. bu. | 433 | -3.8 | 52 | -7.3 | 3.2 | 5.6 | -4.3 | 2.6 | 11 |
| Soybean meal | Bil. lb. | 9.1 | .04 | .12 | -.37 | -.04 | .002 | .067 | -.51 | .2 |
| Soybean oil | Mil. lb. | 1,742 | -20 | 30 | 7 | -70 | -5.2 | -5 | -2.3 | 0 |
| Prices | | | | | | | | | | |
| Soybeans | $/bu. | 2.84 | .03 | -.60 | .14 | -.03 | .10 | .03 | -.05 | .24 |
| Soybean meal | ¢/lb. | 3.9 | -.04 | -.30 | .50 | .03 | .07 | -.07 | -.17 | .3 |
| Soybean oil | ¢/lb. | 12.8 | .47 | -3.7 | -.83 | -.40 | .63 | .61 | .28 | 1.4 |
| Ending Stocks | | | | | | | | | | |
| Soybeans | Mil. bu. | 99 | -.55 | 16 | -1.05 | .45 | .8 | -.36 | .22 | 2 |
| Soybean oil | Mil. lb. | 755 | 6.8 | 5.3 | 13.1 | -5.7 | -10 | 6.8 | -4.1 | -19 |

### Dollar Devaluation Effects

Perhaps the most uncertain assumption for 1971/72 in the reference forecast shown in table 22 is the possible extent of the change in the value of the dollar vis-a-vis currencies of other major developed nations such as Japan and Germany. Since a little over half of our soybeans are sold in foreign nations, any depreciation of the dollar in foreign trade transactions should be expected to affect soybean prices and utilization. Estimates of such an impact are shown in table 23 for a 10 percent weighted average depreciation of the dollar in nations importing U.S. soybeans. If, however, 5 percent is a reasonable assumption, the net indicated impact would be a 12 cent per bushel increase in the price of soybeans. The combined net effect of an assumed 5 percent dollar depreciation with an upward revised crop production for 1971/72 would raise the soybean price estimate from \$3.00 to \$3.04 per bushel (\$3.00-\$.08+\$0.12=\$3.04). The reader can similarly work out other estimates for the remaining dependent variables and for other assumed percentage changes in the value of the dollar.

By revising other assumptions and using the parameters in table 23, other estimates for soybean prices and usage can be derived for 1971/72. This procedure can be continued for deriving estimates for 1972/73. However, soybean production estimates are required before proceeding with the next year's demand estimates.

### Soybean Demand and Supply, 1972/73

Soybean acreage estimates for the 1972/73 marketing year are given by region at the top of table 22. As in the demand model, certain basic assumptions have been made about key variables entering the acreage response relationships for soybeans to derive the 1972/73 acreage and production estimates shown in column 4. These assumptions are:

| | Base |
|---|---|
| Season average price for 1971/72 | |
| Soybeans | \$3.00 per bushel |
| Corn | \$1.00 per bushel |
| Cotton | \$0.26 per pound |
| Basic program assumptions for 1972 | |
| *Corn*[1] | |
| Set-aside | 25 percent |
| Set-aside payment | \$0.40 per bushel |
| Loan rate | \$1.05 per bushel |
| *Wheat* | |
| Domestic allotment | 19.7 million acres |
| Set-aside allotment | 83 percent |
| Domestic certificate payment | \$1.75 per bushel |
| Loan rate | \$1.25 per bushel |
| *Cotton* | |
| Domestic allotment | 11.5 million acres |
| Set-aside of allotment | 20 percent |
| Set-aside payment (gross weight) | \$0.15 per pound |
| Loan rate (gross weight) | \$0.187 per pound |
| 1972 soybean yield | 27.8 bushels per acre |

[1] Actual program provisions as announced differ slightly from those assumed here.

Using these assumptions in conjunction with the acreage response relationships of the Houck model results in an estimate of 47.4 million harvested acres. Applying the assumed yield of 27.8 bushels per acre gives 1,317 million bushels of soybeans produced for 1972/73 (see column 4 of table 22). Applying the earlier assumptions for the major demand shifters, we derived the price and utilization estimates for soybeans and soybean products shown in column 4 of table 22. A crop of this size would generate a season average soybean price of \$2.56 per bushel, a 9.5 cent per pound soybean oil price, and a 3.9 cent per pound soybean meal price.

Because of the uncertainty surrounding some of the assumptions used in generating 1972/73 estimates, one may want to postulate some alternative views. For example, if soybean prices were assumed to average \$2.85 per bushel in 1971/72 rather than \$3 what might this mean for soybean crop estimates, prices, and usage for 1972/73? From column 1 of table 24, a 10-cent per bushel lower price for soybeans in 1971/72 would be expected to result in 628,000 fewer acres of soybeans. Thus, a drop of 15 cents would imply 942,000 fewer acres than indicated by the reference estimate of 47.4 million acres or 46.5 million acres. Acceptability of these estimates can again be checked against the assumptions for the demand shifters given earlier.

Derivation of model demand estimates for 1972/73 does not necessarily depend on model supply estimates. Columns 6 and 7 of table 22 show some selected production estimates and the associated implications for demand and prices. These production levels could be based, for example, on producer intentions to plant as indicated by published reports. However, these estimates could be obtained under various combinations of assumptions with the model. As one final illustration, suppose market price for cotton averages 1 cent per pound less in 1971/72 than assumed and the market price of soybeans averages \$3.25 for the 1971/72 marketing year. What are the implications for soybean harvested acreage, soybean prices, and usage for 1972/73? From table 24, the cotton price decline results in an increase of 79,300 acres in soybeans, and the 25 cent higher average market price for beans would increase 1972/73 acreage by 1.57 million acres. The sum of these effects is a 1.65 million acre increase. Adding this to the 47.4 million acres in column 4 of table 22, a new total acreage of about 49 million acres is obtained. Demand estimates for this acreage level are shown in column 7 of table 22.

We have illustrated some of the major considerations and procedures in using an econometric model for formulating conditional market estimates for the U.S. soybean economy. While a reference or base estimate is given, many alternatives can be derived by substituting other assumptions in lieu of ours.

Table 24.—Regional effects on soybean harvested acres of 10-cent increase in prices received by farmers in the previous year

| Region | Soybeans | Corn | Cotton |
|---|---|---|---|
| | *Thousand acres* | *Thousand acres* | *Thousand acres* |
| Lake[1] | 53 | -45 | --- |
| Corn Belt[2] | 255 | -481 | --- |
| Plains[3] | 87 | -134 | --- |
| Delta[4] | 94 | -99 | ([5]) |
| Atlantic[6] | 39 | -66 | --- |
| Other[7] | 100 | -162 | -793 |
| Total | 628 | -987 | -793 |

[1] Michigan, Wisconsin and Minnesota. [2] Ohio, Indiana, Illionis, Iowa and Missouri. [3] North Dakota, South Dakota, Nebraska and Kansas. [4] Mississippi, Arkansas and Louisiana. [5] The effect of cotton prices on soybean acreage in the Delta States has been assumed to be shown by the cotton program variables alone. [6] Maryland, Delaware, Virginia, North Carolina and South Carolina. [7] Tennessee, Kentucky, Alabama, Georgia and 6 other States.

## Bibliography

[1] Houck, James P. and others. "A Dynamic Supply and Demand Model of Markets for U.S. Soybeans and Their Products," Unpublished manuscript, University of Minnesota, Oct., 1969.

[2] Mo, William, "An Economic Analysis of the Dynamics of the United States Wheat Sector," USDA Technical Bulletin 1395, Apr. 1968, pp. 17-24.

[3] Reutlinger, Shlomo. "Analysis of a Dynamic Model, with Particular Emphasis on Long-Run Projections, "*Journal of Farm Economics,* Vol. 48, No. 1, Feb., 1966, pp. 88-106.

* * *

## JANUARY PLANTING INTENTIONS

A USDA survey to reflect farmers' planting plans as of January 1, 1972, will be conducted in 35 States. State acreage estimates for corn, spring wheat, oats, barley, sorghum, soybeans, cotton and flax will be issued at 3:00 p.m., EST, January 27, 1972. This special survey will not replace the March planting intentions report.

Table 25.--Fats and oils (including their products) and oilmeals: Production from domestic and imported materials, and factory and warehouse stocks at end of month

| Item | Production | | | | | | Stocks | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | October-September | | 1970 | 1971 | | | 1970 | 1971 | | |
| | 1969-70 | 1970-71 | Sept. | July | Aug. | Sept. | Sept. 30 | July 31 | Aug. 31 | Sept. 30 |
| PRIMARY FATS AND OILS | | | | | Million pounds | | | | | |
| Food fats and oils | | | | | | | | | | |
| Butter (creamery) | 1,120.9 | 1,149.7 | 71.8 | 90.2 | 79.6 | 69.0 | 171.3 | 253.0 | 246.8 | 222.0 |
| Lard (commercial) | 1,810.4 | 2,027.7 | 166.4 | 142.0 | 150.0 | 167.0 | 59.8 | 89.1 | 81.6 | 76.6 |
| Beef fats | 577.5 | 555.1 | 49.7 | 40.3 | 41.5 | 48.6 | 36.9 | 49.9 | 57.6 | 62.9 |
| Total edible animal fats | 3,508.8 | 3,732.5 | 287.9 | 272.5 | 271.1 | 284.6 | 268.0 | 392.0 | 386.0 | 361.5 |
| Corn oil | 474.3 | 485.7 | 34.0 | 42.4 | 40.1 | 42.6 | 60.1 | 65.6 | 66.8 | 57.1 |
| Cottonseed oil | 1,250.7 | 1,234.6 | 30.5 | 43.5 | 47.0 | 34.3 | 121.4 | 167.2 | 142.9 | 91.7 |
| Palm oil | --- | --- | --- | --- | --- | --- | 19.6 | 51.2 | 46.5 | 35.9 |
| Peanut oil | 179.6 | 265.7 | 6.7 | 20.4 | 15.0 | 9.4 | 11.6 | 41.8 | 33.1 | 23.7 |
| Soybean oil | 7,904.4 | 8,261.4 | 563.8 | 674.9 | 692.2 | 594.2 | 543.4 | 745.3 | 819.2 | 755.0 |
| Safflower oil | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | 29.1 | 7.8 | 14.5 | 29.6 |
| Total edible vegetable oils | 9,809.0 | 10,247.4 | 635.0 | 781.2 | 794.3 | 680.5 | 785.2 | 1,078.9 | 1,123.0 | 993.0 |
| Soap fats and oils | | | | | | | | | | |
| Tallow, inedible, and greases | 4,830.5 | 4,986.9 | 419.5 | 393.5 | 403.1 | 441.0 | 369.5 | 441.5 | 424.5 | 409.0 |
| Fish and marine oil 1/ | 203.5 | 267.5 | 27.4 | 55.3 | 58.5 | 29.9 | 110.2 | 148.1 | 155.1 | 139.2 |
| Coconut oil | 196.6 | D | D | D | D | D | 145.6 | 147.4 | 124.8 | 111.5 |
| Total soap fats | 5,230.6 | 5,254.4 | 446.9 | 448.8 | 461.6 | 470.9 | 625.3 | 737.0 | 704.4 | 659.7 |
| Drying oils | | | | | | | | | | |
| Castor oil 1/ | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | 118.9 | 93.3 | 88.3 | 94.1 |
| Linseed oil | 306.8 | 395.0 | 36.2 | 25.9 | 34.7 | 35.4 | 129.9 | 193.2 | 177.1 | 179.9 |
| Tall oil | 1,240.4 | 1,271.7 | 90.2 | 96.5 | 94.6 | 94.3 | 140.0 | 172.0 | 163.3 | 143.5 |
| Tung oil | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | 46.1 | 48.0 | 46.9 | 47.7 |
| Total drying oils | 1,547.2 | 1,666.7 | 126.4 | 122.4 | 129.3 | 129.7 | 434.9 | 506.5 | 475.6 | 465.2 |
| Grand total | 20,095.6 | 20,901.0 | 1,496.3 | 1,624.9 | 1,656.3 | 1,565.7 | 2,113.4 | 2,714.4 | 2,689.0 | 2,484.1 |
| From domestic materials | 19,899.0 | 20,901.0 | 1,496.3 | 1,624.9 | 1,656.3 | 1,565.7 | | | | |
| From imported materials | 196.6 | D | D | D | D | D | | | | |
| FAT-AND-OIL PRODUCTS | | | | | | | | | | |
| Cooking and salad oils | | | | | | | | | | |
| Total | 3,335.9 | 3,526.8 | 268.6 | 290.5 | 309.9 | 301.5 | 68.5 | 71.4 | 79.0 | 65.5 |
| Soybean | 2,382.8 | 2,605.3 | 194.2 | 225.6 | 237.3 | 235.6 | 50.5 | 53.5 | 59.0 | 49.1 |
| Other | 953.1 | 921.5 | 74.4 | 64.9 | 72.6 | 65.9 | 18.0 | 17.9 | 20.0 | 16.4 |
| Baking and frying fats (shortening) | | | | | | | | | | |
| Total | 3,639.2 | 3,537.8 | 298.2 | 261.5 | 305.6 | 309.0 | 127.0 | 111.0 | 120.7 | 113.6 |
| 100% vegetable oil | 2,473.6 | 2,350.0 | 196.6 | 176.9 | 199.9 | 208.1 | 94.8 | 82.1 | 93.0 | 87.2 |
| 100% animal fats or blends of vegetable oil and animal fats | 1,165.6 | 1,187.8 | 101.6 | 84.7 | 105.7 | 100.9 | 32.2 | 28.9 | 27.7 | 26.4 |
| Margarine | | | | | | | | | | |
| Total | 2,221.7 | 2,276.9 | 189.6 | 163.4 | 173.3 | 194.4 | 50.3 | 72.9 | 65.5 | 63.5 |
| Soft | 407.6 | 467.2 | 34.3 | 33.3 | 36.8 | 45.3 | --- | --- | --- | --- |
| 1 pound units | 1,966.1 | 2,004.3 | 160.0 | 142.4 | 148.7 | 169.8 | --- | --- | --- | --- |
| All other | 255.6 | 272.7 | 29.6 | 21.1 | 24.5 | 24.6 | --- | --- | --- | --- |
| Fatty Acids | 1,114.7 | 1,095.4 | 92.0 | 73.6 | 91.2 | 95.6 | 124.1 | 125.9 | 115.4 | 119.8 |
| Glycerine (Natural and synthetic) | 341.0 | 330.1 | 24.9 | 26.1 | 28.7 | 27.1 | 48.6 | 37.6 | 40.6 | 43.9 |
| Meat Meal and Tankage | 4,022.3 | 4,065.6 | 361.1 | 317.1 | 326.4 | 354.1 | --- | --- | --- | --- |
| OILSEED CAKE AND MEAL | | | | | Thousand tons | | | | | |
| Soybean (including hull meal) | 17,596.5 | 18,026.8 | 1,273.0 | 1,474.3 | 1,520.6 | 1,295.4 | 137.0 | 215.0 | 215.4 | 144.7 |
| Cottonseed | 1,786.2 | 1,762.2 | 45.2 | 61.1 | 66.4 | 50.3 | 39.3 | 109.5 | 101.9 | 81.9 |
| Linseed | 273.3 | 354.1 | 32.9 | 23.1 | 30.7 | 31.8 | 17.2 | 6.9 | 6.0 | D |
| Peanut | 121.1 | 176.9 | 5.5 | 13.0 | 9.3 | 6.5 | 1.1 | 10.8 | 7.0 | 4.9 |
| Copra | 57.5 | D | D | D | D | --- | D | D | D | D |
| Other | 74.7 | 32.0 | 10.8 | D | 13.6 | 16.6 | 15.2 | 5.4 | 11.4 | 27.3 |
| Total oilmeals | 19,909.3 | 20,352.0 | 1,367.4 | 1,571.5 | 1,640.6 | 1,400.6 | 209.8 | 347.6 | 341.7 | 258.8 |

---

1/ Stocks include GSA stockpile.

N.A. - Not available. D - Census disclosure.

Source: Bureau of Census, except butter.

Table 26 .--Imports and exports of fats, oils, oil-bearing materials, fat-and-oil products (in terms of oil) and oilmeals

| Item | Imports for consumption | | | | | Exports 1/ | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Oct.-Sept. | | 1971 | | | Oct.-Sept. | | 1971 | | |
| | 1969-70 | 1970-71 | July | Aug. | Sept. | 1969-70 | 1970-71 | July | Aug. | Sept. |
| | Million pounds | | | | | | | | | |
| **Food fats and oils** | | | | | | | | | | |
| Butter | 2.2 | 2.3 | 2/ | 2/ | .1 | 1.9 | 19.9 | 5.9 | 2.9 | 3.8 |
| Lard | --- | .2 | 2/ | .1 | 2/ | 349.3 | 329.4 | 10.6 | 15.8 | 19.6 |
| Beef fats | .4 | .1 | --- | 2/ | 2/ | 21.1 | 9.7 | .3 | 1.1 | .9 |
| Total, edible animal fats | 2.6 | 2.6 | 2/ | .1 | .1 | 372.3 | 359.0 | 16.8 | 19.8 | 24.3 |
| Corn oil | 3.1 | .6 | --- | --- | --- | 10.5 | 16.1 | 1.5 | 1.7 | 1.7 |
| Cottonseed oil | .1 | 2/ | 2/ | --- | --- | 452.8 | 371.4 | 69.8 | 14.3 | 26.2 |
| Cottonseed (17 percent) | --- | --- | --- | --- | --- | 9.0 | 12.4 | --- | 2/ | .2 |
| Olive oil, edible | 62.7 | 67.0 | 5.2 | 6.4 | 6.1 | --- | --- | --- | --- | --- |
| Palm oil | 121.8 | 206.9 | 5.6 | 12.1 | 15.4 | --- | --- | --- | --- | --- |
| Peanut oil | 2/ | 2/ | 2/ | 2/ | 2/ | 33.9 | 60.2 | 15.7 | 12.1 | 4.3 |
| Peanuts, shelled (43.5 percent) | --- | --- | --- | --- | --- | 12.5 | 58.3 | 5.0 | 2.2 | 2.4 |
| Soybean oil | --- | --- | --- | --- | --- | 1,419.7 | 1,742.3 | 202.3 | 92.4 | 136.8 |
| Soybeans (18.3 percent) | 2/ | 2/ | --- | --- | --- | 4,941.3 | 4,756.9 | 378.9 | 344.8 | 321.6 |
| Safflower seed (36 percent) | --- | --- | --- | --- | --- | 45.4 | 23.1 | --- | --- | --- |
| Other vegetable oils | 22.1 | 24.1 | 2.0 | 1.4 | 1.8 | 7.9 | 10.7 | .8 | 1.6 | 1.2 |
| Total, edible vegetable oils | 209.8 | 298.6 | 12.8 | 19.9 | 23.3 | 6,933.0 | 7,051.4 | 674.0 | 469.1 | 494.4 |
| **Soap fats and oils** | | | | | | | | | | |
| Tallow, inedible | 7.4 | 7.0 | .4 | .4 | .1 | 1,862.7 | 2,399.8 | 151.4 | 204.5 | 233.2 |
| Greases | 2/ | 2/ | --- | --- | --- | 186.0 | 190.1 | 10.2 | 10.6 | 14.4 |
| Fish and fish liver oils non-medicinal | .3 | 1.6 | .1 | .9 | .2 | 211.4 | 210.1 | 36.6 | 43.3 | 43.8 |
| Marine mammal oils | 46.9 | 49.7 | 16.9 | .2 | .1 | --- | --- | --- | --- | --- |
| Olive oil, inedible | .4 | .2 | 2/ | 2/ | --- | --- | --- | --- | --- | --- |
| Total, slow-lathering oils | 55.0 | 58.5 | 17.4 | 1.5 | .4 | 2,260.1 | 2,800.0 | 198.2 | 258.4 | 291.4 |
| Babassu oil | 6.3 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coconut oil | 561.5 | 606.8 | 35.3 | 30.2 | 79.3 | 9.0 | 16.7 | 2.5 | 1.7 | 1.6 |
| Copra (64 percent) | 301.1 | 224.9 | --- | --- | --- | --- | --- | --- | --- | --- |
| Palm kernel oil | 79.8 | 105.0 | 3.3 | 8.1 | 12.3 | --- | --- | --- | --- | --- |
| Total, lauric-acid oils | 948.7 | 936.7 | 38.6 | 38.3 | 91.6 | 9.0 | 16.7 | 2.5 | 1.7 | 1.6 |
| **Drying oils** | | | | | | | | | | |
| Flaxseed (36.1 percent) | 2/ | 1.5 | --- | --- | 1.5 | 116.0 | 42.0 | --- | .1 | --- |
| Linseed oil | 2/ | 2/ | 2/ | 2/ | --- | 44.8 | 59.2 | 7.5 | .1 | 6.1 |
| Oiticica oil | 5.2 | 3.3 | --- | --- | .7 | --- | --- | --- | --- | --- |
| Tall oil | --- | --- | --- | --- | --- | 162.1 | 145.2 | 12.1 | 12.4 | 12.4 |
| Tung oil | 18.9 | 26.1 | 1.9 | 1.3 | 2.4 | 2.2 | 1.8 | .2 | .2 | .2 |
| Total | 24.1 | 30.9 | 1.9 | 1.3 | 4.6 | 325.1 | 248.2 | 19.8 | 12.8 | 18.7 |
| **Other industrial oils and fats** | | | | | | | | | | |
| Castor oil | 129.0 | 85.3 | 5.1 | 5.8 | 7.9 | --- | --- | --- | --- | --- |
| Fish-liver oils, medicinal | 8.9 | 14.3 | .9 | 1.6 | 1.9 | --- | --- | --- | --- | --- |
| Rapeseed oil | 7.9 | 10.9 | .2 | .7 | .6 | --- | --- | --- | --- | --- |
| Wool grease | 7.2 | 10.6 | .9 | .9 | 1.0 | --- | --- | --- | --- | --- |
| Other vegetable oils and fats, inedible | 11.3 | 11.4 | 1.1 | 1.0 | 1.2 | 89.0 | 88.8 | 5.4 | 3.4 | 13.9 |
| Total | 164.3 | 132.5 | 8.2 | 10.0 | 12.6 | 89.0 | 88.8 | 5.4 | 3.4 | 13.9 |
| **Products** | | | | | | | | | | |
| Margarine (fat content) | --- | --- | --- | --- | --- | 3.4 | 2.5 | .2 | .2 | .1 |
| Shortening | --- | --- | --- | --- | --- | 23.9 | 21.6 | 1.1 | 1.5 | 1.7 |
| Salad products (fat content) | --- | --- | --- | --- | --- | 8.7 | 9.8 | .6 | .6 | .8 |
| Soap (fat content) | 2.6 | 2.7 | .2 | .2 | .5 | 11.5 | 10.3 | .7 | 1.0 | 1.1 |
| Fatty acids | 8.4 | 7.3 | .7 | .5 | .5 | 115.0 | 127.3 | 8.6 | 13.8 | 10.8 |
| Total | 11.0 | 10.0 | .9 | .7 | 1.0 | 162.5 | 171.5 | 11.2 | 17.1 | 14.5 |
| Grand total | 1,415.5 | 1,470.0 | 79.8 | 72.0 | 133.6 | 10,151.2 | 10,735.6 | 928.0 | 782.2 | 858.6 |
| Glycerine | .3 | .8 | --- | --- | .8 | 73.2 | 66.1 | 8.1 | 5.3 | 4.0 |
| **Oilseed Cake and Meal:** | Thousand tons | | | | | | | | | |
| Soybean | --- | --- | --- | --- | --- | 4,035.4 | 4,559.3 | 406.6 | 349.7 | 487.9 |
| Cottonseed | 1.1 | --- | --- | --- | --- | 18.8 | 26.9 | .1 | 2/ | --- |
| Linseed | 2.0 | 1.5 | .2 | .1 | .1 | 83.5 | 110.0 | 8.8 | 10.9 | 25.3 |
| Copra | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Corn | --- | --- | --- | --- | --- | 3.3 | 1.8 | .1 | .1 | 2/ |
| Other | 6.6 | 2.2 | .2 | .1 | .4 | 47.2 | 75.7 | 3.5 | 2.5 | 4.5 |
| Total oilmeals | 9.7 | 3.7 | .4 | .2 | .5 | 4,188.4 | 4,773.8 | 419.1 | 363.2 | 517.7 |

1/ Includes re-exports and foreign donations but not shipments to U.S. Territories. 2/ Less than 50,000 pounds.

Source: Bureau of Census.

Table 27.--Index numbers of wholesale prices of fats and oils

| Item | 1967=100 | | | | |
|---|---|---|---|---|---|
| | September | | 1971 | | |
| | 1969 | 1970 | July | Aug. | Sept. |
| All fats and oils | 107 | 118 | 122 | 126 | 122 |
| All fats and oils, except butter | 110 | 125 | 134 | 141 | 134 |
| Grouped by origin: | | | | | |
| Animal fats | 118 | 123 | 119 | 120 | 119 |
| Vegetable oils, domestic | 88 | 114 | 134 | 144 | 132 |
| Vegetable oils, foreign | 105 | 127 | 107 | 110 | 108 |
| Grouped by use: | | | | | |
| Butter | 102 | 106 | 102 | 102 | 102 |
| Butter, seasonally adjusted | 100 | 104 | 108 | 106 | 100 |
| Lard | 129 | 147 | 144 | 154 | 142 |
| Lard, refined | 116 | 121 | 118 | 124 | 120 |
| Food fats other than butter | 100 | 126 | 139 | 149 | 138 |
| Food fats other than butter and lard | 91 | 119 | 137 | 148 | 137 |
| All edible fats and oils | 101 | 115 | 120 | 125 | 119 |
| Soap fats | 129 | 130 | 132 | 134 | 134 |
| Drying oils | 90 | 98 | 98 | 102 | 97 |
| Other industrial | 116 | 127 | 123 | 124 | 121 |
| All industrial | 123 | 125 | 126 | 130 | 128 |
| Edible vegetable oils, grouped by degree of processing: | | | | | |
| Crude | 89 | 116 | 137 | 148 | 136 |
| Refined | 92 | 114 | 136 | 141 | 134 |
| End products | 100 | 112 | 123 | 125 | 123 |
| Margarine | 100 | 112 | 120 | 122 | 121 |
| Shortening, 3 lb. tin | 98 | 112 | 124 | 126 | 125 |
| Shortening, 400 lb. drum | 102 | 112 | 123 | 123 | 123 |

All indexes except "Butter, seasonally adjusted" and "Other industrial" from Bureau of Labor Statistics.

Table 28.--Prices received by farmers and prices at terminal markets for specified oil-bearing materials and oilmeals

| Item | Unit | October | | 1971 | | |
|---|---|---|---|---|---|---|
| | | 1969 | 1970 | August | September | October |
| | | -- Dollars -- | | | | |
| OILSEEDS | | | | | | |
| Copra, Philippines, c.i.f. Pacific Coast | Short ton | 184.80 | --- | --- | --- | --- |
| Cottonseed, United States average | Short ton | 40.20 | 56.00 | 60.00 | 58.40 | 55.80 |
| Flaxseed, No. 1, Minneapolis | Bushel | 2.77 | 2.60 | 2.62 | 2.61 | 2.58 |
| Flaxseed, United States average | Bushel | 2.64 | 2.31 | 2.34 | 2.31 | 2.25 |
| Peanuts, United States average (farmers' stock) | 100 lb. | 12.40 | 13.20 | 12.90 | 13.50 | 13.80 |
| Peanuts, Virginias' No. 1, shelled, Va.-N.C. 1/ | 100 lb. | 21.75 | 21.25 | 22.25 | 22.38 | 22.12 |
| Peanuts, Runners No. 1, shelled, Southeast 1/ | 100 lb. | 21.88 | 21.62 | 22.50 | 22.62 | 22.62 |
| Peanuts, Spanish No. 1, shelled, Southeast 1/ | 100 lb. | 21.50 | 21.38 | 22.38 | 22.50 | 22.50 |
| Peanuts, Spanish No. 1, shelled, Southwest 1/ | 100 lb. | 21.75 | 21.88 | 22.88 | 22.75 | 22.50 |
| Soybeans, No. 1, Yellow, Chicago | Bushel | 2.38 | 2.95 | 3.29 | 3.12 | 3.11 |
| Soybeans, No. 1, Yellow, Illinois country shipping points | Bushel | 2.30 | 2.90 | 3.23 | 3.01 | 3.04 |
| Soybeans, United States average | Bushel | 2.23 | 2.77 | 3.09 | 2.95 | 2.96 |
| OILMEALS (bulk) | | | | | | |
| Copra meal, 20 percent protein, Los Angeles | Short ton | 74.00 | 80.00 | --- | --- | --- |
| Cottonseed meal, 41 percent protein, Memphis | Short ton | 63.40 | 72.60 | 78.00 | 76.50 | 66.80 |
| Cottonseed meal, 41 percent protein, Chicago | Short ton | 72.40 | 83.40 | 89.40 | 86.80 | 79.30 |
| Cottonseed meal, 41 percent protein, Atlanta | Short ton | 62.20 | 76.60 | 78.10 | 79.90 | 71.00 |
| Cottonseed meal, 41 percent protein, Ft. Worth | Short ton | 69.30 | 82.50 | 79.90 | 77.60 | 75.60 |
| Fish meal, 60 percent protein, bagged, New York 2/ | Short ton | 193.40 | 188.10 | 161.00 | 160.00 | 158.00 |
| Fish meal, 60 percent protein, bulk, Los Angeles 3/ | Short ton | 168.80 | 150.00 | 135.00 | 135.00 | 135.00 |
| Linseed meal, 34 percent protein, Minneapolis | Short ton | 65.00 | 65.10 | 66.00 | 64.40 | 63.00 |
| Linseed meal, 34 percent protein, New York | Short ton | 86.00 | 84.00 | --- | --- | --- |
| Peanut meal, 50 percent protein, f.o.b. Southeastern mills | Short ton | 76.00 | 83.60 | 75.60 | 76.75 | 73.00 |
| Safflower meal, 20 percent solvent, San Francisco | Short ton | 35.00 | 42.50 | 38.20 | 36.90 | 35.60 |
| Soybean meal, 44 percent protein, Chicago | Short ton | 79.90 | 82.40 | 84.75 | 79.25 | 80.75 |
| Soybean meal, 44 percent protein, Decatur | Short ton | 75.40 | 77.25 | 78.75 | 73.25 | 74.75 |
| Soybean meal, 44 percent protein, Atlanta | Short ton | 82.10 | 86.30 | 87.10 | 84.30 | 83.00 |
| Soybean meal, 44 percent protein, Memphis | Short ton | 76.60 | 80.10 | 80.60 | 77.75 | 77.20 |
| Soybean meal, 50 percent protein, Decatur 4/ | Short ton | 82.10 | 83.75 | 84.20 | 80.00 | 80.75 |
| Soybean meal, 50 percent protein, Memphis 4/ | Short ton | 84.70 | 88.75 | 89.10 | 84.80 | 85.50 |
| Soybean meal, 50 percent protein, Atlanta 4/ | Short ton | 90.50 | 94.20 | 95.50 | 90.40 | 90.70 |

---

1/ This price applies to peanuts for edible uses. 2/ Beginning July 1971, quoted as 65% protein, East Coast. 3/ Beginning July 1971, quoted as 65% protein. 4/ 49 to 50 percent protein.

Compiled from Oil, Paint, and Drug Reporter, Wall Street Journal, Chicago edition, reports of the Statistical Reporting Services, and the Consumer Marketing Service.

Table 29.--Wholesale and retail prices per pound for fats and oils

| Item | October | | 1971 | | |
|---|---|---|---|---|---|
| | 1969 | 1970 | August | September | October |
| | | | -- Cents -- | | |
| Wholesale Prices | | | | | |
| Butter, creamery, Grade A, (92-score) bulk, New York | 69.0 | 71.3 | 68.8 | 68.8 | 68.9 |
| Butter, creamery, Grade A, (92-score) bulk, Chicago | 68.2 | 70.1 | 67.8 | 68.1 | 68.0 |
| Butter, creamery, Grade A, (92-score) prints, San Francisco | 82.3 | 85.8 | 83.8 | 83.8 | 83.8 |
| Castor oil, dehydrated, tanks, New York | 28.0 | 28.0 | 29.0 | 29.0 | 29.0 |
| Castor oil, No. 1, Brazilian, tanks, imported, New York | 14.8 | 18.0 | 17.0 | 17.0 | 17.0 |
| Coconut oil, crude, tank cars, Pacific Coast, 1/ | 14.0 | 16.2 | 14.2 | 14.1 | 13.2 |
| Coconut oil, crude, tanks, f.o.b. New York | 14.8 | 16.7 | 15.1 | 14.6 | 14.0 |
| Coconut oil, refined, tanks, l.c.l., New York | 15.8 | 18.0 | 16.6 | 16.1 | 15.7 |
| Cod oil, spot, drums, New York | 8.0 | 8.5 | --- | --- | --- |
| Codliver oil, medicinal, U.S.P., barrels, New York | 19.5 | 21.1 | 22.8 | 22.8 | 22.8 |
| Corn oil, crude, tank cars, f.o.b. Midwest mills | 13.7 | 17.8 | 18.9 | 17.8 | 17.8 |
| Corn oil, crude, tanks, New York | 13.5 | 18.6 | N.A. | N.A. | N.A. |
| Corn oil, refined, tanks, New York | 15.8 | 21.4 | 22.5 | 21.1 | 20.6 |
| Cottonseed oil, crude, tank cars, f.o.b., S.E. mills | 10.2 | 13.4 | 16.5 | 16.1 | 14.4 |
| Cottonseed oil, crude, tank cars, f.o.b., Valley | 10.2 | 13.6 | 16.5 | 15.6 | 14.3 |
| Cottonseed oil, crude, tank cars, f.o.b., Texas | 10.0 | 13.3 | 16.0 | 15.3 | 14.1 |
| Cottonseed oil, refined, tanks, New York | 14.8 | 17.6 | 20.9 | 20.0 | 18.7 |
| Degras, Lanolin technical, drums, New York | 22.0 | 37.0 | 47.0 | 47.0 | 47.0 |
| Glycerine, synthetic, refined, 99.5%, tanks, delivered, New York | 24.2 | 22.0 | 23.0 | 23.0 | 23.0 |
| Glycerine, natural, refined, USP. 99%, tanks, delivered, New York | 24.1 | 20.6 | 22.6 | 22.6 | 22.6 |
| Grease, A white, tank cars, delivered Chicago | 7.9 | 8.4 | 7.6 | 7.4 | 7.4 |
| Grease, B white, delivered, Chicago | 7.0 | 7.8 | 6.7 | 6.6 | 6.5 |
| Grease, yellow, delivered, Chicago | 6.7 | 7.0 | 6.4 | 6.5 | 6.3 |
| Grease, white, choice, tanks, New York | 5.0 | 8.4 | 7.6 | 7.3 | 7.6 |
| Grease oil, extra No. 1, drums, Chicago 2/ | 13.4 | 13.4 | 15.2 | 15.2 | 15.2 |
| Lard, loose, tank cars, Chicago | 11.6 | 11.8 | 12.0 | 11.1 | 10.8 |
| Lard, prime steam, tierces, Chicago | 11.8 | 12.1 | 11.4 | 11.2 | 10.7 |
| Lard, refined, one and two pound prints, Chicago | 17.1 | 16.3 | 16.8 | 16.3 | N.A. |
| Lard, refined, carlots, 50-lb. tins, Chicago | 14.4 | 14.6 | N.A. | N.A. | N.A. |
| Linseed oil, raw, tank cars, Minneapolis | 11.9 | 10.0 | 8.8 | 8.8 | 8.8 |
| Linseed oil, raw, tanks, New York | 13.1 | 11.3 | 10.2 | 10.2 | 10.2 |
| Margarine, colored, delivered, Eastern U.S. | 26.5 | 29.4 | 31.2 | 31.0 | 31.0 |
| Margarine, yellow, quarters, f.o.b., Chicago | 19.6 | 20.8 | 24.2 | 24.2 | 24.2 |
| Margarine, white, domestic vegetable, Chicago | 18.3 | 19.5 | 23.0 | 23.0 | 23.0 |
| Menhaden oil, crude, tanks, f.o.b., Baltimore | 4.5 | 9.5 | 9.0 | 9.0 | 9.1 |
| Menhaden oil, light pressed, tanks, New York | 9.5 | 10.5 | 10.5 | 10.5 | 10.5 |
| Oiticica oil, drums, f.o.b., New York | 18.0 | 18.0 | 18.5 | 18.5 | 18.5 |
| Oiticica oil, tanks, New York | 16.0 | 16.0 | 16.5 | 16.5 | 16.5 |
| Olive oil, imported, edible, drums, New York | 38.7 | 39.3 | 42.7 | 42.7 | 42.7 |
| Palm oil, clarified, drums, f.o.b., New York | 12.5 | 16.5 | 14.6 | 14.8 | 14.8 |
| Palm oil, Congo, tank cars, f.o.b., New York | 11.2 | 13.2 | 13.8 | 14.0 | 14.0 |
| Peanut oil, crude, tank cars, f.o.b. S.E. mills | 14.2 | 16.9 | 18.5 | 17.2 | 16.4 |
| Peanut oil, refined, tanks, New York | 17.2 | 19.8 | 21.8 | 20.6 | 19.8 |
| Rapeseed oil, refined (denatured), tanks, New York | 13.8 | 17.0 | 17.5 | 17.5 | 17.5 |
| Safflower oil, tanks, New York | 15.6 | 16.5 | 18.4 | 18.4 | 18.4 |
| Safflower oil, edible, drums, New York | 22.8 | 27.0 | 27.0 | 27.0 | 27.0 |
| Sesame oil, refined, drums, New York | 35.0 | 39.0 | 39.0 | 39.0 | 39.0 |
| Shortening, all vegetable, hydrogenated, 440-lb. drums, New York | 22.2 | 25.2 | 25.5 | 25.5 | N.A. |
| Shortening, all vegetable, hydrogenated, 3 lb. tins, delivered, Eastern U.S. | 25.8 | 30.0 | 33.0 | 33.0 | 33.0 |
| Soybean oil, crude tank cars, f.o.b., Decatur | 10.6 | 14.0 | 14.5 | 12.8 | 13.2 |
| Soybean oil, refined, tanks, New York | 12.4 | 15.9 | 16.0 | 14.5 | 14.6 |
| Soybean oil, clarified, tanks, New York | 10.3 | 16.4 | 17.8 | 17.8 | 17.8 |
| Sperm oil, natural 45°, drums, New York | 16.0 | 26.0 | 28.0 | 28.0 | 28.0 |
| Sperm oil, bleached, winter 45°, drums, New York | 17.0 | 27.0 | 29.0 | 29.0 | 29.0 |
| Tall oil, crude, tanks, works | 3.4 | 3.5 | 3.8 | 3.8 | 3.8 |
| Tall oil, refined, tanks, works | 7.5 | 8.5 | 8.5 | 8.5 | 8.5 |
| Tallow, edible, loose, Chicago | 11.6 | 11.8 | 11.8 | 11.5 | 10.5 |
| Tallow, inedible, packers' prime, c.a.f. delivered, Chicago | 7.3 | 8.3 | 7.3 | 7.2 | 7.0 |
| Tallow, inedible, bleachable fancy, delivered, Chicago | 7.7 | 8.8 | 7.9 | 7.6 | 7.4 |
| Tallow, No. 1, inedible, delivered, Chicago | 6.7 | 7.3 | 6.5 | 6.4 | 6.9 |
| Tallow, special, inedible, tanks, delivered, New York | 7.2 | 8.0 | 6.8 | 6.9 | 6.9 |
| Tung oil, imported, drums, f.o.b., New York | 19.4 | 26.0 | 16.1 | 15.5 | 15.5 |
| Tung oil, imported, tanks, New York | 17.5 | 21.3 | 13.1 | 13.2 | 13.1 |
| Tung oil, domestic, tanks, f.o.b. mills | 3/24.0 | 3/24.0 | N.A. | N.A. | N A. |
| Retail prices 4/ | | | | | |
| Butter | 85.8 | 87.3 | 87.5 | 87.6 | 87.6 |
| Margarine | 27.7 | 30.6 | 32.8 | 33.2 | 33.3 |
| Shortening | 27.5 | 30.2 | 32.5 | 32.9 | 32.9 |
| Salad Dressing (Italian) | 75.6 | 78.0 | 81.6 | 81.8 | 81.6 |
| Peanut Butter | 62.3 | 65.1 | 66.1 | 66.6 | 66.6 |
| Cooking and Salad oils | 34.6 | 38.8 | 42.8 | 43.4 | 43.4 |

1/ Includes 1 cent import duty.
2/ Beginning June 1971, quoted as Lard Oil, No. 1, New York.
3/ Nominal.
4/ Leading cities.
N.A. Not available.

ITED STATES DEPARTMENT OF AGRICULTURE
WASHINGTON, D.C. 20250

---

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, $300

POSTAGE AND FEES PAID
U.S. DEPARTMENT OF
AGRICULTURE

U.S.MAIL

**NOTICE:** If you don't want future issues of this ERS publication, check here ☐ and mail this sheet to the address below.

If your address should be changed, write your new address on this sheet and mail it to:

Automated Mailing List Section
Office of Plant and Operations
U.S. Department of Agriculture
Washington, D.C. 20250

FOS-260 NOVEMBER 1971

☆ U. S. GOVERNMENT PRINTING OFFICE : 1971 O 481-812/ERS-66